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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1991

TUESDAY, MARCH 20, 1990

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10 a.m. in room S-128, the Capitol,
Hon. Harry M. Reid presiding.

Present: Senators Reid, McClure, and Domenici.

SMITHSONIAN INSTITUTION

STATEMENT OF ROBERT McC. ADAMS, SECRETARY

ACCOMPANIED BY:

DEAN W. ANDERSON, UNDER SECRETARY

NANCY D. SUTTENFIELD, DIRECTOR, OFFICE OF PLANNING AND BUDGET

BUDGET REQUEST

Senator REID. The subcommittee will come to order. Today we will review the fiscal year 1991 budget request for the Smithsonian Institution. Testifying in support of that request will be the Secretary, Mr. Adams.

The Smithsonian's request is \$307,690,000, an increase of \$41,000,000, or 15 percent, over the current year appropriation of \$266,690,000. In addition, an employment level of 4,510 full-time equivalents is proposed, which is 113 more than the fiscal year 1990 program.

The proposed \$41 million increase includes a \$30,695,000 increase for salaries and expenses, a \$2,188,000 increase for repair and restoration, a \$248,000 increase for zoo construction and improvements, and a \$7,869,000 increase for other construction.

PREPARED STATEMENT

Welcome before the subcommittee this morning, Mr. Secretary. We have your written statement and it will be made a part of the record. If you wish to introduce your associates, you may do so. Then if you would summarize your statement, which I have read in its entirety, it would be appreciated.

[The statement follows:]

STATEMENT OF ROBERT McC. ADAMS

Mr. Chairman and Members of the Subcommittee

It is my privilege to appear again before the Subcommittee to share with you some reflections on the present state and future directions of the Smithsonian and to testify on behalf of the Institution's FY 1991 budget request. I would like to express my deep appreciation to you for your continued support of the programs and activities of the Institution in this time of epochal change and accelerating international developments, in Eastern Europe, in Germany, in South Africa, in Central America, and even in the Soviet Union.

These events, I believe, provide a remarkable setting for our own institutional stocktaking and direction. Unfolding before our eyes has been a wide, often sudden, and seemingly unplanned array of extraordinary world changes. Some of them have genuinely empowered and facilitated the forces of reform, others merely recognized and legitimated them, and still others have patently attempted, with what I hope is only temporary success, to stifle massive, spontaneous movements toward human rights and democratization. What better background could there be for our own institutional consideration of the interplay between structure and function; between vision and reality; between status quo perspectives about knowledge, culture and the arts, and the challenges of cultural pluralism brought on by rapidly changing demographics in our country?

In giving form to these considerations over the next several years, the Institution will seek to apply resources to three general areas of endeavor. Our budget request for FY 1991 and our recent Five-Year Prospectus highlight steps that I believe will be seen as encouraging and facilitating needed changes in our own outlook and program, rather than marking time as both national and world events overtake us.

Our total request for FY 1991 is \$307.7 million. After meeting uncontrollable cost increases for such items as utilities and pay, the requested Salaries and Expenses increase amounts to \$15.7 million. A total of \$51.5 million is sought for facilities construction, construction planning, and improvements.

Infrastructure Requirements

The first point I wish to make is that the Institution has examined its capacity to be steward of the Smithsonian trust. We have found both our facilities, including our landholdings, and our program infrastructure greatly deficient to meet the growing and changing demands being placed on us by the increasingly diverse audiences that we must serve.

The refurbishment of our infrastructure encompasses many operational tasks. These range from replacing outdated exhibitions, to improving the care and custody of collections, to increasing accessibility to both collections and programs and providing our scholars with the instruments and assistance they need to carry on high-quality research. These tasks also encompass strengthening the virtually invisible support systems which are, nonetheless, absolutely essential for effective delivery of institutional services to the general public as well as to the individual researcher outside the Institution.

I want to underscore the need to address these program infrastructure requirements by highlighting one critical area: the application of advanced technology to information processing. The term "information processing," which once referred exclusively to installed computing systems and their support functions, is now used in most large corporations to characterize the flow and control of all information throughout an entire organization. While we have made progress in updating our computer systems over the past several years, the Institution's ability to fully utilize advanced technology to foster more effective information processing in this broader sense is still woefully inadequate.

It is imperative that we begin to incorporate more strategic thinking with regard to our information systems. This thinking will get right to the core of many Smithsonian management issues, allowing us to design and implement systems to serve our needs, as opposed to predetermined, piecemeal solutions offered by systems already in place. The advantages of a more rigorous and aggressive information management plan are many. To enumerate a few:

- more rapid and inclusive communication among the bureaux and departments of the Institution through distributive processing, electronic mail and file sharing facilities;
- less opportunity for redundant systems development work;
- more coordinated and focused planning with regard to information use throughout the Institution;
- potential cost savings by minimizing duplicative start-ups; and
- the utilization of collection, research and administrative information in ways never before possible through cross-referencing and online access.

Making the full use of today's (and tomorrow's) technologies will require significant long-term investments in resources, well beyond what our available base funding can support. However, like our various other program infrastructure needs, these additional resources do not constitute new or growing programs, but rather necessary funding to carry out current programs more effectively and efficiently. Addressing these infrastructure gaps is the only solution to both meet today's research, education and administrative objectives and lay the foundation for future advancement.

To begin to address our varied infrastructure needs, our request focuses on resources for automated and other systems for daily management of the Institution's programs, for uninterrupted improvements in the instrumentation available for research, for exhibits reinstallation, and for other stewardship responsibilities. Approximately \$7.5 million is being sought for the Institution's operating infrastructure, including \$1.2 million for information systems, \$4.4 million for SAO's two major telescope projects, and \$0.9 million for the replacement of permanent exhibits.

In addition, approximately \$43.4 million is requested for our facilities infrastructure. This amount will continue our major capital renewal program (\$13.9 million), repairs to buildings and projects for compliance with various structural codes (\$14.7 million), and construction planning, modifications, and improvements to Smithsonian facilities (\$8.1 million) and to National Zoological Park facilities (\$6.7 million).

As a matter of information to the Subcommittee in the context of our facilities planning and infrastructure needs, I should mention that we expect to issue shortly a Request for Proposal to obtain offers for a larger replacement facility for our presently leased North Capitol Street Building. This building will serve a wide range of specialized uses, such as exhibition preparation and printing, that support activities both on the Mall and in other Smithsonian operations off the Mall. We are exploring all options for funding such a replacement facility. Given the construction priorities before us, it is likely that the best way to acquire this facility is under a lease-purchase arrangement with a private developer similar to the approach used for the International Cultural and Trade Center. Following our investigation, we expect to present a proposal in the FY 1992 budget.

In regard to longer-term construction priorities, I might mention here that all options for funding the National Air and Space Museum extension, for which the Dulles International Airport site was recently approved by the Regents, are also under consideration. Institutional discussions continue with officials of the Commonwealth of Virginia and other potential supporters.

Our plans call for the National Museum of Natural History to enter the 21st century substantially renovated and revitalized, with completely new mechanical systems throughout the building and new public halls. Renovation is a complex undertaking involving the orchestration of complex procedures. The mechanical systems need to be replaced without evacuating the building or disrupting the scientific research, exhibition, and public activities of the Museum. We are considering ways to provide staging space for programs and activities in the East Court of the Museum, to continue the rehabilitation of exhibition halls, and to accelerate the removal of collections in storage areas that will be refurbished. The FY 1991 Construction budget contains a request of \$1.5 million for renovation planning to assure that these complex interlocking activities proceed as smoothly as possible.

Exemplifying the Nation's Pluralism

Second, I believe that an overarching responsibility for preserving and articulating the nation's cultural heritage is likely to be the Smithsonian's greatest challenge for a good many years to come. The Smithsonian is here to engage and to serve all segments of our population, as well as to address a worldwide community of scholars and audiences. It cannot narrowly favor, idealize, or reify purported "mainstream" cultures or values. Ours is a multiracial, pluralistic country. Museums can and should play an important role in dispelling the negative stereotyping of race, ethnicity, and gender. We must assure that our employment, education, and outreach efforts are sensitive and responsive to the conditions, needs, and aspirations of our many audiences and professional sectors.

Therefore, the Institution in FY 1991 is seeking \$15.4 million to exemplify the nation's growing cultural pluralism. Of special note in this regard are the gratifying endorsement and support of Congress and the President for the Institution's newest endeavor in this direction, the creation of the National Museum of the American Indian.

This new National Museum is at the forefront of our undertaking. Nothing is more appropriate, I believe, than for the First Americans to be at the head and heart of our effort to study, interpret, and celebrate the diverse cultural experiences that constitute this Nation

--and for their Museum to become a flagship of hemispheric cultural diversity.

With the formal establishment of the Museum this past November, initial planning and design of programs and facilities for the Museum are proceeding on schedule. The Institution and the Museum of the American Indian, Heye Foundation, are obtaining approval by the Supreme Court of New York for the transfer of the Foundation's collection and other property, and we are looking forward to the completion of the transfer in the near future. The Board of the new museum, established at the most recent meeting of our Regents, includes in its membership leading Indian scholars and administrators, drawn from a number of various tribes. In addition, in January, the Institution began the search for architectural and facilities services.

I want to emphasize that this Museum, to an unprecedented extent, will "belong" to Native Americans. Under Native American leadership, the Museum will be devoted not to the timeless past of Hollywood mythmaking (or to the too-frequent misconceptions of school textbooks) but to the full intellectual, artistic, and cultural achievements of a living people--a heterogenous people with many beliefs and forms of material expression who speak to the world in many voices of their hopes and tragedies and permanent places in the family of humanity.

Our budget for FY 1991 calls for the next increment of resources to translate this vision into reality. An increase of \$5.3 million is sought for program development and operations, and \$8.1 million will advance the construction planning and design process.

To further exemplify the Nation's pluralism, the Institution is requesting additional funds to commemorate the Quincentenary of the arrival of Columbus in the New World. The activities that the Institution is preparing will in no sense deny the importance of the single act of "discovery" by an intrepid navigator but will focus instead on the vast, prolonged, and absolutely unprecedented "encounter" between streams of civilization that had previously been unaware of one another.

The significance of this encounter towers above the origins of this or that kind of government or even the fate of this or that group of humans. The encounter marks one of the major discontinuities in the course of life on this planet. Measuring its influence requires reference to a scale of time far greater than historians or archaeologists normally consult.

The changes to manifold cultural processes wrought by the encounter transcend the discoveries of the great geologists, biologists, and thinkers of the eighteenth and nineteenth centuries. To find comparable changes we must go back beyond recorded time to the divisions between the periods of geologic history that were characterized by the separation of continents, the rising up of mountains, and the draining of inland seas. The activities we plan will highlight the permanent importance of this unique juncture in human history.

The National Museum of the American Indian and the Quincentenary commemorations provide the basis for gaining new Institutional experience in fulfilling responsibilities to exemplify cultural pluralism. As we proceed, these experiences will set the pattern for the Institution's national and international outreach. The pattern will help shape, for example, the expansion and incorporation of African American programs and facilities on the Mall. This effort

will differ in detail from the National Museum of the American Indian and the Quincentenary, but it will be informed by the same vital force of cultural pluralism. Before plunging ahead with major new collecting capabilities, programs, or facilities, the Institution is deliberately taking into account the important needs and potentialities of the African American Museum Association with its hundred or so members. Our current planning and program development process is designed to guide and expand initiatives leading to a new entity for the study and public exhibition of African American history, culture, and art. This entity could be a research center and archive, a noncollecting gallery, an extension of an existing museum, a trust for the promotion of established African American programs and museums, or a new and separate facility. At the same time, through this new initiative, the Smithsonian will be able to identify ways to enhance current African-American programming throughout its other museums and programs, including the Museum of American History, the Anacostia Museum, SITES, the Office of Folklife Programs, and the Institution's art museums and research bureaus. Our planning will ultimately benefit from the counsel of distinguished members of the academic, cultural, and corporate communities and from the examination of African American programs at the Smithsonian and throughout the country.

To further our exemplification efforts in these various regards, including related efforts such as the repatriation of skeletal remains and funerary objects and special multicultural employment initiatives, the FY 1991 budget contains a request for additional resources of \$2 million.

Understanding the Global Environment

A third major focus in this year's budget for advancement of institutional research specialties over the next years involves the Institution's interests in monitoring, understanding, and moving to arrest the deterioration of the global environment. This is a crucial focus of Smithsonian effort, given our long tradition as a world center of research in natural history and our concentration of expertise in many of the relevant fields.

Several daunting, intersecting aspects of global environmental degradation have compelled us to consider carefully where our comparative advantages as an institution direct us to place our primary attention. One is its enormous scale and complexity, dictating scientific efforts of unprecedented size that call upon the collaboration of specialists in many disciplines and many countries. Another is the incomplete understanding around the world of potential interactions among governing parameters of environmental change that could lead to sudden and serious permanent results. Still another is the inadequate base of information, especially long-term data, on which models of dynamic interaction can be tested and extended to provide reliable predictions.

The Institution's initial contribution to the massive scientific efforts now under way will focus on one of our greatest traditional centers of strength, the study of tropical rainforests. Tropical deforestation is a most devastating element in the present complex of destructive environmental changes.

The annual burning of tropical rainforests generates a billion tons of excess carbon to the atmosphere, contributing perhaps a fifth of the increasing proportion of carbon dioxide responsible for the "greenhouse effect." Quite apart from this, deforestation has catastrophic, irreversible consequences for maintaining hydrologic cycles, landscapes, soil stability, biodiversity and the way of life for many indigenous peoples.

Efforts to understand the impact of deforestation must begin with securely established species identification and classification. This is, of course, a major concern of our National Museum of Natural History. Equally crucial to the same set of efforts is the Smithsonian Tropical Research Institute in Panama, with its understanding of neotropical rainforests that draws upon nearly 70 years of ongoing studies. At SERC, studies continue on the effects of increased CO₂ on plant growth, since plant responses will be important in predicting the rate of increase of CO₂ in the atmosphere. In addition, we need to increase our understanding of survival and propagation methods for various species of plants and animals for future research benefits to agriculture and medicine and for social and economic uses that have yet to be discovered.

The \$1 million increase contained in this budget encompasses the Institution's screening of important ways it can immediately increase its contribution to understanding and eventually arresting the processes of global environmental deterioration. It has been widely observed by the international scientific community that some of these processes, originally more controllable because they were localized and hence partially isolated from one another, are now spreading and ominously converging to suggest the onset of a deep-seated and intractable crisis. International means of coping with these processes urgently need to be addressed, and the Institution is determined to strengthen its participation in related scientific efforts.

Some Issues Bearing on FY 1990

Our financial operations for the current year are under continuing scrutiny as we take action to respond to the Gramm-Rudman-Hollings reductions, to the need to absorb pay and utility costs within our S&E account, and to a significant decrease of income from our auxiliary activities. We anticipate curtailing expenditures in both our federal and trust budgets to offset these reductions. Unfortunately, due to these factors it will not be possible to offer extended hours this spring and summer. The cost of extended hours has increased, now amounting to approximately \$525,000. Most of this expense is for additional summer staff within our Office of Protection Services, which this year had to absorb a budget reduction of \$1.2 million related to the above set of factors. Funds for summer hours are not available elsewhere in the Institution on account of these same factors, and efforts to raise such funds in the private sector have been unsuccessful.

We are also making a careful assessment of the extent to which our operations in Panama have been disrupted by the recent events in that country. We are thankful that our people suffered no injury and no loss of life, and we sustained no significant harm to facilities, ongoing research, or other activities. Our review will reflect our increased concerns about the security of our various activities and sites--in particular the protection of forests and their human and animal populations.

As the Subcommittee may be aware, legislation has been introduced by our Congressional Regents to establish a Smithsonian Institution Senior Service. This proposal is aimed at assuring that we are not disadvantaged by pay raises for the Senior Executive Service. The Smithsonian is not in the SES by determination of the Office of Personnel Management. Salaries for our civil service senior staff, including senior curators and researchers, are on the General Schedule, and they threaten to lag far behind comparable jobs in the SES. Congressional support for the Smithsonian legislation is critical in order for us to be competitive.

With these thoughts, I close my statement.

INTRODUCTION OF ASSOCIATES

Secretary ADAMS. Thank you, Mr. Chairman. On my left is Mr. Dean W. Anderson, who is the Under Secretary of the Institution. On my right is Nancy D. Suttenfield, Director of our Office of Planning and Budget. In addition, a number of senior colleagues are here from other parts of the Institution, assistant secretaries and directors of some of our bureaus, and you may want to call on them.

INFRASTRUCTURE PROBLEMS

I will try to be brief in my summary because I think the major points are covered in the written testimony. But the position that I would like to give emphasis to is that the Smithsonian is, in fact, encountering critical problems in coping with its present budget, which on the surface might appear to represent a healthy increase, but most of that increase is devoted to mandatory increases over which we have no control. And the fact is that they are at levels that for a large part, I think, escape public notice.

We are operating at a level which involves serious long-term effects on the quality of our programs. I would first say that those problems are at the levels of our infrastructure. Problems that are characteristic of universities, museums, and hospitals are certainly also characteristic of ours. Not only are there problems of bricks and mortar, although there, too, I don't think we are maintaining appropriate levels that over the long run will keep our structures in the repair. But in addition to the problems of bricks and mortar, I think we face a general inability to move as rapidly as we should in the replacement and improvement of our instrumentation, including the telescopes of our astrophysical observatory, lab equipment, and computers. I think in many respects we lag behind comparable institutions in these areas.

There are similar problems in our stewardship of our collections, where I think there is some acceleration in deterioration that obviously is a source of concern to us, and in our capacity to keep up with the cataloging of the material in our collections. Other problems affect the long-term survival of our library and our archival materials.

What I guess I can call an infrastructural problem of a somewhat different kind is that we face a chronic inability, particularly at the senior levels, to retain the very best possible staff or to attract them when there are positions available. We are pleased that

one of our regents is introducing a bill that would speak to the creation of a Smithsonian senior executive service that would be directed toward this, and I hope that indeed succeeds.

CULTURAL PLURALISM

The two major programmatic areas that I should very briefly touch on, where it seems to me we have long-term responsibilities that need to be met, are, first of all, with regard to cultural pluralism. The Smithsonian needs to be sensitive to relationships with and the expectations of multiple constituencies in this country. I think we've made some progress in doing so. We need to make more.

This touches on issues of affirmative action, and also of course concerns the impending progress on the National Museum of the American Indian. It concerns studies of our African American programming, our Anacostia Museum, and, finally, the quincentenary of Columbus, which obviously improves relationships between the Smithsonian and the Hispanic population in this country.

GLOBAL CHANGE RESEARCH

The second area is global change and diversity, in which Smithsonian has a primary role to play through its major investments over many years, many decades, particularly in the field of tropical biology where the dangers of ongoing global change are perhaps most considerable. Our national collections and the National Museum of Natural History are one of the great resources of the world, in fact, for the encyclopedic study of global change, and we are indeed making investments in that respect, too.

TRUST FUND RESOURCES

The final point I make is that problems that we are encountering on the appropriated side of our budget are paralleled by declining possibilities for increases, beyond maintaining a plateau of income, from our trust resources, our private resources.

What is involved in that is in part the plateauing of income from our stores and other activities of that kind, advertising income from the magazines and so on.

So, we are, in fact, facing problems across our entire budget as well as in the part that we will be discussing here today. I think that I will break off at that point, Mr. Chairman. And my colleagues and I are certainly ready to try to handle your questions.

BUDGET PRIORITIES

Senator REID. Secretary Adams, I am interested in your statement here. And I have to tell you that I am concerned about the presentation. I am concerned not only about the prepared text but by the various statements that have been made at least on the part of the Washington Post about, in effect, threatening to close the museums at various times during the summer.

So I think it is important that I get this started the way that I feel that I should and ask you what is going on. It sounds like maybe there should be more funds for management. You look at

some of the things—for example, considering the repair and restoration backlog, inability to continue traditional summer hours, gallery closures, and inspector general findings. And I at least, personally, question why the Smithsonian is grasping for money for a floating lab in Panama, telescope construction projects with locations in Arizona or Hawaii, and for an American Indian museum which appears to be overly ambitious and, by some accounts, inadequate planning. The Air and Space Museum annex and American display are also under discussion.

I can continue my list of projects which are taking the place of maintaining our buildings and serving the public. I haven't mentioned the global warming initiatives. As I mentioned to my colleagues while we were waiting for the court reporter, it seems like everyone is into global warming. Every agency that comes before us has a project for global warming. A third of the U.S. Geological Survey's new budget proposal involves global warming matters.

So, by your own admission you are unable because of budget constraints to keep the doors of the facilities open to the public. We are receiving complaints about Smithsonian's choices, and I must say, from what I've read and how I analyze this, I consider some of these complaints to be well-founded. I have to tell you that you come into this with a lot of chips because of the great reputation the Smithsonian has. And that is something that we have to be concerned about. Having said that, I don't think that the committee can, in effect, be coerced or threatened with closure of what the public deems important, that is, to be able to walk through the museums.

So, let me ask you a couple of questions with that brief statement. What avenues have you pursued in looking for ways to finance the shortages in the funding for operating hours and maintenance? And why have you not closed programming in other areas in order to adequately fund summer hours?

FUNDING FOR SUMMER HOURS

Secretary ADAMS. Mr. Chairman, we have never been in a position to include summer hours in our regular budget other than as we can, in fact, find ways to reprogram. They have never been a feature of our regular budget.

This year, with a budget that is, at least in our view, more constrained than it has ever been before, we simply don't see how to fund the summer hours. It isn't that this is something that has regularly been a part of our budget and that we have cut back. That isn't the case at all.

I might point out that I wrote a letter to Senator Byrd in November, indicating that, because of the failure of the Congress to approve the transfer of the utility payments to the Smithsonian, as was expected by this committee, we would be faced with cutbacks in exactly this area during fiscal 1990. This is a case where we could foresee the trouble coming and did notify the committee on it last November.

I don't think that it was a question of our not being aware of what the problem was. It was a question of our not knowing what we could do to make up for that problem.

IMPACTS OF CURRENT BUDGETARY PROBLEMS

And I think that we should perhaps go on to indicate that we are operating well below ceiling in many places simply in order to hold back funds to cover these. There are some 60 unfilled positions in the National Museum of Natural History which have been held back in order to try to protect our basic position. There are no acquisition funds available in the National Museum of American History for the same reason.

I think that the impacts on the Smithsonian of this present budgetary problem are really very severe and are being felt all across the Institution. I don't really think it is the case that we have continued to expand in a variety of areas irresponsibly. I think we do have a variety of responsibilities that we will presently come to in the areas you mentioned and I am happy to speak to them.

Senator REID. Let's do that. Looking at it from the perspective of someone that has been given the assignment by Senator Byrd—and I sit on some of these subcommittees separate and apart from that—all agencies are stricken with a lack of money.

Secretary ADAMS. I understand.

Senator REID. I talked to Dr. Billington of the Library of Congress and he has severe monetary problems. One out of every eight positions he can't fill. And they have thousands and thousands of employees who are at the Library of Congress, so we are talking about lots and lots of people, a lot more than 60 positions that aren't filled there.

We have books that aren't being cataloged, books that aren't being restored that really might be lost forever. But at least we are trying to guard—and he is—against new programs. That is the concern that I have, is how can we justify these new programs when we are talking about things like cutting back the hours?

Secretary ADAMS. Let me point out, Mr. Chairman, that when you speak of cutting back the hours, we are not cutting them back below their regular level. We are simply maintaining the level hours of the institution.

Senator REID. Are you saying you are just not extending them?

Secretary ADAMS. We are not extending them during the summer. And let me point out that we have kept records of the attendance, and the attendance falls off very sharply during those hours. The total summer attendance during the extended hours last year was approximately 265,000. That is about one-sixth of what would come in during a 2-hour period in the morning in the regular hours.

Senator REID. That is beginning to make a little more sense. If you have a basis—we have a lot of important programs. The Smithsonian has engaged in all kinds of things that I think are fortunate. But perhaps the way that this has been approached, at least in your approach to the subcommittee and your other approaches to others, I don't know, but maybe you would have been better off pointing out that those extra hours are not productive.

Secretary ADAMS. Well, I don't want to say they are not productive for the people who have no other opportunity to come other than during those hours. One hesitates to make a calculation of how important it is to someone who has no other opportunity than

during those hours, so I resisted doing that. But that certainly went into our calculation. We were trying to look at the cost-benefit pattern, so to speak, across the whole thing.

Senator REID. Before I turn this over to my colleagues, I would ask that you spend a little bit of time justifying how you can ask for new moneys for new programs, and cut back on things such as the summer hours.

Secretary ADAMS. Well, if we speak of new programs, let me take two that you mentioned. And I think they have somewhat different explanations.

NATIONAL MUSEUM OF THE AMERICAN INDIAN

First of all, there is the National Museum of the American Indian. I should point out that this was passed, without dissent, by both Houses, and it represents an initiative in which I think there was felt to be major national support for moving in this direction, support that was also felt at the White House and expressed at the White House.

Senator REID. Obviously, from what the OMB did with your budget submission, in which you asked for x number of dollars and, surprise of all surprises, rather than get less you got more than you asked for.

Secretary ADAMS. Well, I admit that we too may have been surprised by that. But that is at a level of decisionmaking that I don't have any personal influence over.

The present situation with regard to the existing Museum of the American Indian in New York, which hasn't yet been transferred to the Smithsonian's jurisdiction, is that it is just about bankrupt. It is at the very edge of its resources. There is nothing further to carry on with at that museum in New York. And I think it was a calculation of that kind that also led the White House and the Congress to feel they had to move ahead on this, that the collection, the private means to maintain that collection were just about gone, and that certainly entered into the decision that was made.

AIR AND SPACE MUSEUM EXTENSION

With regard to the Air and Space Museum, if I may turn to that for a moment, I make no prediction when the Smithsonian will be in a position to ask for the appropriation to move forward in that area. It does seem to me that the Institution has a responsibility in the very long run to maintain the collections within the field of air and space, where the leadership of this country has been second to none in this century in an achievement which I think will forever stand for what the United States is capable of.

Whether we will be able to begin next year or 5 years from now is not something that we have made any commitments on. In this sense I don't think that should be regarded as a sort of a wild budgetary exercise on our part. We are well aware that the funds are not going to be there at the moment. We are well aware that it took between 1945, when the present Air and Space facility was authorized, and 1970 before the first funds were appropriated for that construction. And it is in that spirit that we have gone forward in our negotiations with Virginia. I hope it will not be that long for

that, but all I am saying is the authorization may be a very considerable distance from the appropriation.

Those are two programs that I think have a somewhat better case to be made for them as appearing in our planning than you have indicated.

Senator REID. Your colleague there is champing at the bit.

INFRASTRUCTURE SUPPORT

Mr. ANDERSON. I might also try to put some of the decreases and increases that have been discussed in some context concerning the budget that is before the committee for its review.

OMB, it is true, did cut our request to the administration significantly, particularly in the areas of infrastructure support. However, the allowance that the President permitted does have in it over \$6 million to plug holes that are caused on a one-time basis this year because of the water and sewer charge absorption, because of pay raise absorption, and because of worker's compensation costs.

Now, that is one-time bottoming out, if you will, of our ability to keep on board the kind of staff necessary to keep all of the galleries open, for example. It is also the principal reason why we have such shortages in a variety of places around the campus. Simple approval of the budget that is here will erase about 90 percent of the problem that we are having this year. In other words, it is not guns or butter, if you will; it is not galleries or new starts. The budget before you significantly repairs the infrastructure problems of the sort that have already been discussed concerning keeping the place open to the public.

Now, for this year, this bottoming out year, we are indeed engaged in reprogramming of a variety of sorts.

First, on the floor, if you will, in each museum we are conducting a review of the location of guard posts so as to make sure we are getting the maximum coverage for the staff that we already have. That in itself may prevent some gallery closings.

In addition to that, there will be reprogrammings between line items in the Smithsonian's budget, still within the "Salaries and expense" account, to make sure that as we bottom out in a budgetary sense we do not bottom out in a public service sense. In other words, we are going to be able to maintain the status quo despite the one-time effect of these budget cuts.

Now, the only way that that can happen is through further belt-tightening on the part of programmatic activities. The Secretary is absolutely right: acquisition funds have been cut to the bone. Several of our museums no longer have Federal funds for exhibition purposes. The only exhibition activity is that which is supported by the private sector, which is a peculiar way for a national museum to run itself because it holds the subject matters that we can present to the public hostage to the whims of the profit sector, and I'm not sure that is healthy in the long run.

MUSEUM GALLERY CLOSINGS

Finally, with regard to the matter of gallery closings, I think what got reported in the newspaper was a leak of an internal

memorandum about a worst-case scenario. That is not what was intended, but—

Senator REID. We are not familiar up here with newspaper leaks.

Mr. ANDERSON. I am sure you are not, Mr. Chairman. It certainly represented no attempt on the part of management of the Smithsonian to manipulate the environment within which this session takes place, for example, because we know that it would have precisely the opposite effect.

Secretary ADAMS. In fact, Mr. Chairman, our problem, as Mr. Anderson has just indicated, is in the current fiscal year. The problem of the inadequacy of the size of our guard posts will not be present under the budget that is before you. And we do intend somehow or another to reprogram funds in order to make up for the guard deficits this summer, in order not to let that be a source of closing of galleries. We have many galleries that have repairs underway that may have to be closed, but we do intend somehow or another to fill the gap this summer. But that is not a feature of the budget that is before you.

Mr. ANDERSON. The final comment I would make, Mr. Chairman, is that I said only about 90 percent of the problem we have been talking about would be rectified by simple approval of the President's budget. There is a structural base deficiency in our Office of Protection Services that would not be touched by these numbers. That may represent as much as another \$1 million that we have had in prior years to reprogram from other sources annually, simply in order to keep up to full strength.

Now, we aren't able to do that this year, make that kind of reprogramming, because of budget cuts in all sorts of areas: the Gramm-Rudman cut, the water and sewer absorption, the pay raise cut, lots of things.

Consequently, not only aren't we able easily to reprogram for that structural deficiency, the Office of Protection Services itself has been hit by those same budget reductions. So, it is a one-time hole, but we get most of the way out of it simply with approval of the budget as it stands. The residual piece would still be missing.

Senator REID. I'm going to have made part of the record a Tuesday, January 30, 1990, article out of the Washington Post written by Elizabeth Kastor, and one of Friday, March 16, from the Post by the same woman, dealing with the Smithsonian. In these articles are direct quotes. One is from the Secretary and there is another from a woman by the name of Madeleine Jacobs. Both of those are direct quotes about closing of the galleries.

Secretary ADAMS. I never spoke with Mrs. Kastor.

Senator REID. We will make this part of the record. It is a direct quote.

It looks highly unusual in the current budget situation, but these increases are for uncontrollable costs, such as utility expenses, Smithsonian Secretary Robert McC. Adams said of the \$41 million increase.

Mr. ANDERSON. This is part of the press release?

Senator REID. So, we will make those part of the record.

[The information follows:]

[From the Washington Post, Jan. 30, 1990]

SMALL BOOST FOR THE ARTS

BUSH BUDGET ENDS YEARS OF NO-GROWTH

(By Elizabeth Kastor)

In his first full budget request, George Bush asked for small increases in funding for the arts and humanities, including the Smithsonian Institution and the National Endowments for the Humanities and the Arts.

The proposed budget, sent to Congress yesterday, includes a request for \$307.7 million for the Smithsonian, a 15.4 percent increase over the fiscal 1990 appropriation. Much of that money is earmarked for the planning and design of the new National Museum of the American Indian, as well as continuing maintenance and renovation.

A \$3.7 million increase for the National Endowment for the Arts (NEA), up from last year's \$171 million allocation, is "a modest increase percentage-wise," said NEA Chairman John Frohnmyer. But for an agency that has gone through a year of political turmoil and had been kept at essentially level funding during the Reagan years, the increase carries symbolic weight. Frohnmyer did not fail to point this out, calling an unusual press conference yesterday to announce the increased request. "Glad to be able to give some good news," he said.

The National Endowment for the Humanities (NEH) came in at \$165 million, up from the \$159 million allocated by Congress last year. The NEH proposes to spend \$2.5 million of that \$6 million increase to expand foreign language study in institutions at all educational levels.

"Before, in my time here, when we wanted to do something new, it meant we had to quit doing something else," said NEH Chairwoman Lynne Cheney. "Now it's immensely rewarding to be able to take over something new like foreign languages and still continue apace with the projects we've had so much luck with in the past."

The request for the National Gallery of Art, which receives federal funding for operational costs, was \$48.9 million, an increase of \$6.4 million that includes \$1.5 million for an exhibit planned to commemorate the quincentenary of Columbus's 1492 voyage.

The proposed budget for the Institute of Museum Services, which supports the operating expenses of museums, zoos and botanical gardens, was \$24 million, a \$1.3 million increase.

Despite the increases, arts advocates took pains yesterday to point out that because of pay increases and other escalating costs, the budget provides no windfalls.

"It looks highly unusual in the current budget situation, but these increases are for uncontrollable costs, such as utility expense," Smithsonian Secretary Robert McC. Adams said of the \$41 million increase.

Despite the increase, Adams said the Smithsonian plans to cancel expanded summer hours unless private funding can be found. "We are looking hard for ways to cut costs," he said.

The most partisan commentators also pointed out that the money does not come close to compensating for years of austerity during the Reagan administration.

"Actually, I'm disappointed," said Rep. Bob Carr (D-Mich.), chairman of the Congressional Arts Caucus. "I had thought we could have received a little more out of this administration. It would take probably \$230 million to give constant budget protection from what was cut for the Endowment for the Arts alone."

Bush's "budget message," which serves as a foreword to the budget, states that \$757 million has been requested for "activities that preserve, pass on and contribute to the American heritage, \$63 million (9 percent) more than enacted in 1990.

"Direct federal expenditures and tax incentives for preserving America's cultural heritage are a relatively small part of the budget," reads the message. "For a variety of reasons of political cultural philosophy, they must remain so. But they should never be viewed as so small that they should be overlooked, nor so insignificant that they might be dismissed."

As Reagan did in the past, Bush is proposing an end to the National Capital Arts and Cultural Affairs fund, which gives grants to major District arts and cultural organizations. The legislative rationale for the fund is that arts fund-raisers find it especially difficult to raise money in the nation's capital. Despite administration attempts to eliminate the fund, Congress last year appropriated \$5.4 million for it.

Of the NEA increase, \$2 million is slated for arts education, with another \$1.4 million going toward administration costs. Frohnmyer said the administration increase will be partly consumed by congressionally mandated pay raises, but will also

serve to achieve "broader representation" on the artistic peer panels that select grant recipients. The NEA was assaulted last year for several controversial grants, and Congress created a commission to study the agency's granting procedures.

[From the Washington Post, Mar. 16, 1990]

SMITHSONIAN MAY CLOSE SOME GALLERIES

SECURITY COSTS CITED FOR POSSIBLE ACTION

(By Elizabeth Kastor)

Pressured by rising costs and budget cuts, the Smithsonian Institution is considering closing a "substantial" number of museum galleries as one possible cost-cutting measure, according to Smithsonian officials.

"Right now we're talking more about what might happen rather than what is happening," Smithsonian spokeswoman Madeleine Jacobs said yesterday. "One of the things being considered is closing a certain portion of the galleries if we can't bring our guard levels up to assure the security of the collection and the safety of the visitors."

Jacobs declined to specify how many galleries might be closed, because "we don't like to give out figures when it comes to security."

Smithsonian officials know that the threat of closing gallery space is a powerful political tool, useful for influencing Congress but also dangerous if it appears to reflect a lack of attention to the needs of the public. Emphasizing that "we are a public facility and we care about the public," Jacobs said that no decision about closing galleries has been made, adding, "Right now it's almost like crying wolf when there's nothing to cry wolf about."

But the Smithsonian took a 5.6 percent cut in its fiscal 1990 budget, and National Museum of American History Director Roger Kennedy said yesterday that he was concerned over how the institution will absorb that.

"It seems to me inevitable that portions of the museum will be closed because keeping proper security means you don't thin out your guard force too much," said Kennedy. "The current state of our budget is such that across the board we're going to have to do less—less exhibitions than we should, less research than we should. We will not be able to buy any new materials related to underrepresented people."

Like all federal agencies, the Smithsonian has had to absorb the federal employee pay raise since January, and has also taken a cut under Gramm-Rudman legislation. Like some other tourist attractions in the District, the Institution has also seen a drop in visitors over the last year, leading to a commensurate drop in sales in its restaurants and gift shops. Advertising sales were also down for its magazines.

In addition, the Smithsonian was forced to shoulder a \$2.7 million water and sewer bill this year due to a legislative glitch. In the past, funds for such bills were allocated through the District's federal appropriations budget, but fiscal 1990 legislation required federal agencies to pay their own water and sewer bills. Unfortunately for the Smithsonian, its appropriations legislation had already been approved when the change was made, so the Institution was forced to find the money elsewhere.

The water bill shortfall is expected to be only a one-year phenomenon.

Under the suggestions now being considered, the costs of guards would be whittled down through attrition. Museums, which were all forced to cut 5.6 percent, are taking other actions already. The National Museum of Natural History, for example, has left 60 curatorial and research vacancies empty. "If all you talk about is gallery closing, Congress will correctly said, 'Get it from somewhere else,'" said Kennedy, whose museum would be particularly hard-hit by any closings because many of its galleries are already closed for renovations. "This is part of a much larger problem."

The Smithsonian budget comes up before the House Appropriations Interior subcommittee next month. Some Smithsonian officials would like to see the allocation increased beyond the \$308 million requested by the White House, already a 15 percent increase over the 1990 budget, partly to support the creation of an American Indian museum.

But Jacobs said, "We had a very generous budget compared to a lot of other people last year, even with the cuts. I think we want to be very careful laying this back at Congress's doorstep. Of course we always feel we need more funding—how

could I say we don't—but I think we're trying to find solutions in our budget without saying to Congress we need more money to do that."

WASHINGTON POST NEWS ARTICLES

Secretary ADAMS. I might point out, Mr. Chairman, it is a customary thing for any museum or gallery to have gallery spaces closed. The Smithsonian always has gallery spaces closed because exhibitions are turning over. A term of art is to have the space dark.

Senator REID. We understand that. But of course the suggestion of these articles is that it is being done because there is a lack of money. We understand that the museum has to have renovations and repairs and changing exhibits.

Secretary ADAMS. That series appeared because of a determined reporter who received an internal memorandum and went after a number of our directors to get some confirmation, and then went to Madeleine Jacobs, our Director of Public Affairs, having received some confirmation. There was no spirit of threat behind the articles.

Senator REID. I accept that.

Senator McClure.

Senator McClure. I am reminded, at a much different level, of those who work in local government before coming to the Federal Government who always found that the school that didn't have enough money to satisfy their budget request shut down the football team and marching band first. So you will forgive us for our suspicion as we thought you might be doing the same thing when we saw an article like that.

Incidentally, that is the first issue I addressed in my series of questions, and I will submit those for the record. I would also ask unanimous consent that the letter addressed to the chairman dated November 14, which you have made reference to, be made part of the record.

Senator REID. That will be done.

[The information follows:]

LETTER FROM ROBERT McC. ADAMS

NOVEMBER 14, 1989.

Hon. ROBERT C. BYRD,
Chairman, Subcommittee on Interior and Related Agencies, Committee on Appropriations, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: I write to bring to your attention a very serious problem that will significantly affect Smithsonian programs this year—the anticipated requirement for the Smithsonian to pay the District of Columbia for the costs of water and sewer services beginning in January 1990. This requirement is based on proposed changes to the D.C. Public Works Act in the D.C. Appropriations bill.

The Smithsonian requested approximately \$3.7 million in its fiscal year 1990 budget to cover the payment for water and sewer services, consistent with the aforementioned proposed change and as the Office of Management and Budget directed. It was OMB's intent to change the method which has in the past provided full funding for these costs directly to the District as part of its Federal appropriation to a method whereby federal users would reimburse the District. Based on the apparent assumption that legislative authority required to implement this change would not be passed (as in prior years) both the House and Senate Subcommittees on Interior and Related Agencies eliminated the requested funding for D.C. water and sewer costs from the Smithsonian's budget request.

However, during action on the D.C. appropriations bill this year, the Senate supported the necessary changes to grant the District appropriate authority to implement this change; subsequently the Conference Committee on the D.C. appropriation bill approved reimbursement to the Treasury by federal users for these water and sewer costs. While the President's veto of the D.C. appropriations bill has temporarily put off the implementation of this change, subsequent enactment of a compromise version of the bill containing this new provision will result in the requirement for the Smithsonian Institution to pay these new charges without benefit of additional funding.

Like other federal agencies, we are also now confronted with the 5.3 percent across-the-board reduction specified under Gramm-Rudman-Hollings and a number of other unfunded costs, the largest of which is the cost-of-living pay raise to become effective in January. With the potential absorption of water and sewer costs, we are facing the equivalent of an 8.8 percent across-the-board reduction in the purchasing power of our operating budget (approximately \$20 million). Since we can absorb very little of the GRH reduction and other unfunded costs within cost areas like utilities for controlled museum environments, leased space, and food for animals in the collections, we estimate that Smithsonian programs will actually have to bear a reduction amounting to almost 10 percent. Although there will be every effort to protect public programs, core research, and collections care, including conservation and animal care programs, I foresee the following consequences of a cutback of this magnitude, arising necessarily from employment curtailments and a resulting shortage of funds for supplies, materials, equipment and contract services.

- Inadequate preventive and custodial maintenance on the buildings which house museums, galleries, the zoo and research facilities (some 6 million square feet), many of which already suffer from inadequate care. Such deficiencies serve to exacerbate the problem of the repair backlog.
- Cancellation of extended summer visiting hours normally taken advantage of by almost half a million visitors.
- Suspension of the production of new permanent and temporary exhibits, many of which would replace exhibits that became outdated/obsolete some years ago.
- Closure of exhibition halls and galleries, adding to the number that already remain closed to the public because of inadequate numbers of guards.
- Reduction to public education programs at night and on weekends because of guard and custodial personnel shortages.
- Each of the above impacts, by discouraging visitation would negatively impact revenues generated by museum shop sales and food service, thus having a secondary impact on the Institution's trust budget.
- Deferral of the replacement of laboratory equipment and elimination of field work by the research staff, thus hindering their effectiveness and productivity.
- Avoidance of purchases for the National Collections.
- Slowing of the development of urgently needed first-time and successor information systems for the internal control of financial and collections management.
- The Institution will also have to defer approximately \$1.2 million in critical facilities repair projects, thus reversing recent progress in achieving an appropriation level that comes closer to addressing adequately the repair backlog. This backlog exists now as the result of the inability of past appropriation levels to keep pace with the rate of deterioration.

Because of the severe consequences that the equivalent of a 10 percent across-the-board reduction to our purchasing power would have on the full range of the Institution's research, collections, and educational programs, I wanted to alert you to the unique problem of the change in water and sewer expenses, particularly in the context of other budget constraints like GRH. If there is any opportunity to correct this problem while Congress is still considering the D.C. bill, we would very much appreciate any assistance that you can render. Also, we understand the GRH reduction may be partially or completely reversed on a case-by-case basis. We would naturally welcome the opportunity to make a case for an exception to the GRH sequestration before your Subcommittee. In the meantime, please be assured that we are undertaking every effort to develop a spending plan for fiscal year 1990 that ensures the most effective utilization of scarce budgetary resources.

Sincerely,

ROBERT McC. ADAMS,
Secretary

IMPACTS OF FISCAL YEAR 1990 ABSORPTIONS

Senator McCCLURE. I did note in that letter that you suggested that the summer visiting hours normally are taken advantage of by almost 500,000 visitors. I think you used a figure about slightly more than one-half that.

Secretary ADAMS. I said 265,000, which is a count we made within the last few days.

Senator McCCLURE. We should take that figure rather than the one in the letter of November 14?

Secretary ADAMS. The problem, Senator McClure, is that we can count the people who enter the door from 5 o'clock onward, but we cannot tell, given our methods of counting, how many coming in at 4 may have availed themselves of the longer hours. There is some room for slippage between those two numbers.

Senator McCCLURE. I understand what you are getting at. Your letter also identified a variety of the consequences of a cutback of this magnitude, and that is a quotation from the letter. Now that we are halfway through the fiscal year, what specific actions have been taken?

Secretary ADAMS. Do you want to speak to that?

Senator McCCLURE. Would you like to submit that for the record?

Mr. ANDERSON. We can submit it for the record, sir. But some of the commentary already touched on a variety of approaches around the campus for belt-tightening. The principal one is allowing positions to remain vacant as they become vacant, which is kind of like strangulation in slow motion for the program activity of the Smithsonian.

Senator McCCLURE. Can you provide a more detailed accounting of the actions you have taken to respond to that cutback? Because I do believe that we anticipated that you wouldn't have to absorb those utility accounts, and in the rush to closure last fall, the Congress did not take appropriate action and you were confronted with something that we did not anticipate either. But I would like to know what you have done to accommodate to that.

[The information follows:]

EXAMPLES OF IMPACTS OF GRAMM-RUDMAN-HOLLINGS CUTS AND OTHER UNFUNDED COSTS, INCLUDING WATER/SEWER AND PAY RAISE COSTS

SI is running a 10 percent vacancy rate this year, compared to an average vacancy rate of 5 to 6 percent (due to normal staff turnover) for the last several years. Roughly half the number of vacancies this year is due to budget reductions and other unfunded costs. At the end of February, the security force had 91 positions that were unfilled due to lack of funds; NMNH had a freeze on 50 vacant positions to stay within budget.

NASM cannot afford the \$100,000 cost to shelter its newest acquisition, the SR-71 Blackbird reconnaissance aircraft. (NASM lost almost half a million of its spending power this year to GRH, pay costs, and water/sewer.)

Virtually all museums and the Zoo have reduced their spending on public education programs (including new exhibits, lectures, school programs, concerts) and on routine maintenance and cleaning, which will exacerbate an already staggering backlog of deferred repair projects.

The Folklife Festival will be at a much reduced scale relative to previous years. The Festival is one of the Institution's most visible celebrations of cultural diversity. The Festival cannot sustain continued reductions and also sustain a vital program that fulfills our public responsibilities to minorities and other ethnic communities.

All research bureaus are deferring purchases of replacement scientific equipment. Noncompetitive salaries already hinder recruitment/retention; outmoded equipment will exacerbate these difficulties.

INFRASTRUCTURE NEEDS

Senator McCCLURE. The fiscal year 1991 justification identifies \$67 million in annual infrastructure needs for the Smithsonian and salaries and expenses of this amount. You asked for \$7.5 million for fiscal year 1991 to get started on this program. Most of the items identified are high priority needs, including health and safety requirements, as well as security arrangements. I would note, however, that some items don't appear to be infrastructure needs, but in fact are upgrades of existing equipment. For example, of the \$7.5 million requested in fiscal year 1991, \$4.4 million is to continue the construction of the submillimeter telescope array and conversion of multiple-mirror telescope. How do you define infrastructure in this analysis?

MAJOR SCIENTIFIC INSTRUMENTATION

Secretary ADAMS. I think, Senator McClure, obviously there can be a variety of definitions. And this may not fall within yours, but from our perspective we have in the Smithsonian Astrophysical Observatory one of the primary facilities for research in this field in the world. And if one is to maintain a facility like that, you need to plan well in advance to have on hand the material that will keep its staff in place and keep them together as much as a decade before they are going to exhaust the sources that they currently have.

That telescope—the reason that the OMB agreed to put the submillimeter array in the budget at all was that they saw the need for the orderly development of the facilities that would maintain a staff and laboratory as well. And I think when you are dealing with something like astrophysics, where major instrumentation is like blood, so to speak, you can make a case for calling it infrastructure. I can see that you might also feel that that is strictly an upgrade that has to be taken on its own merits.

Senator McCCLURE. Well, it doesn't sound to me like it is of the nature that I would ordinarily call an infrastructural need, and that is the reason that I asked the question so that we can understand your budget submission. I don't know that there are any direct analogies that come to mind or that are even needed, but it struck me that those are not infrastructures in any term that we would understand.

Mr. ANDERSON. I think, Senator, from the point of view of a local community the sewer system clearly is infrastructure because it is necessary to process daily activity if you will. From the point of view of a scientific community, having the tools necessary to conduct science is as essential.

Senator McCCLURE. It seems to me we will get a better meeting of the minds if you try to figure out how we think.

Secretary ADAMS. I think you are right. The point is well taken.

FISCAL YEAR 1991 INFRASTRUCTURE NEEDS

Senator McCCLURE. I guarantee you I didn't think that way before you came here, and I'm not sure I will after you leave. How do you determine which infrastructure needs to fund in fiscal year 1991 and which to defer?

Secretary ADAMS. Mr. Anderson can answer that.

Mr. ANDERSON. In part, Senator McClure, this was a decision suggested for us by OMB in their detailed review of our budget request of the administration.

Also, to be fair, I think they based their reaction on the vigorousness with which we justified portions of that OMB request.

It was their suggestion, for example, that the Office of the Inspector General be included for a specific budgetary increase. It was certainly their interest, along with ours, twinned, if you will, with regard to the astrophysical observatory equipment that the Secretary just referred to. It is a clear need to everybody inside the Smithsonian and at OMB that we have to get on with our information and financial management systems. This is computers, this is accounting systems. OMB was sympathetic. That is the next largest slug of dollars, if you will, in the request under infrastructure.

As to other aspects, exhibition reinstallation is an infrastructure item if the business at hand is a museum, for example. There are 900,000 dollars' worth of infrastructure of that sort, most particularly at our Museum of Natural History, in this dollar total of \$7.5 million that you referred to.

Senator McCCLURE. I was looking at the table as shown on page 2 of your justification and it has a list of requests of increases in the fiscal 1991 budget in the unfunded requirements backlog. And I noticed that you've requested in the budget something less than \$7.5 million. I was just wondering how you assigned priorities between the several items that were listed in that table.

Mr. ANDERSON. In part by following OMB's guidance. In part by trying to tackle first those things that seemed to us to undergird most of what remained.

If, for example, you don't have a good computer system underpinning your management information systems, you can't do research, you can't do accounting, you can't do billing. There are many activities that are directly affected by that. Consequently, there is a reasonable sum of money here—not nearly as much as we had requested, but over \$1 million—for our information resources activities.

Secretary ADAMS. There are categories, Mr. McClure—I mentioned one that is quite large, facilities maintenance deficiencies—where one can apply sliding scales to let this roof go for so many years; you can squeeze another year out of it.

Senator McCCLURE. We hope.

Secretary ADAMS. We hope. And I think many of the decisions are of that character—in light of the fact that there obviously is a budgetary limitation.

REPAIR AND RESTORATION BACKLOG

Senator McCCLURE. Let me shift for a moment from salaries and expenses to repair and restoration. In response to a question during

the fiscal year 1989 hearing, the Institution indicated that backlog of maintenance for repair was \$197 million. An additional \$20 million was provided in fiscal year 1989.

Unfortunately, the fiscal year 1990 justification indicated a backlog of still \$197 million even after the \$20 million was provided. The Smithsonian indicated that the facilities inspection program revealed additional items to add to the backlog as well as some changes to the previously estimated cost of items. An additional \$26 million was provided in fiscal year 1990 to address this backlog.

Unfortunately, the fiscal year 1991 justification indicates the backlog has risen to \$229 million. The Smithsonian indicates that further inspection has uncovered additional requirements of more extensive damage and deterioration. More detailed studies have also recommended higher cost estimates.

I'm extremely frustrated with this situation. Perhaps you are, too. If my math is right, we have provided the Smithsonian with \$46 million to address a \$197 million problem, but the problem has grown to \$229 million. Why is the Smithsonian having such a hard time understanding its own needs?

Secretary ADAMS. Well, I think we are talking about a moving target. These are buildings that, in fact, do continue to deteriorate. It isn't something that can be corrected on a one-time basis. Those problems are going to remain.

I think perhaps we ought to ask Mr. Richard Siegle, who is in charge of our facilities, to come up.

Mr. SIEGLE. Senator McClure, the backlog of essential maintenance—the definition of that is the unfunded backlog at the time the inspection is done, what items need to be done at that point in time that you don't have money to do.

So, if you make that inspection this year, which the \$229 million reflects, that would not take into consideration a roof which becomes eligible for replacement or needs to be replaced in 1992 or a chiller that needs to be replaced in 1993. In other words, the backlog is those things which should have been done at that time but you don't have money to do. Then each year there is new, there are other things that come up, things that need to be replaced. Equipment has a certain life and roofs have certain lives and so forth. So, we are indeed adding to the backlog each year with more projects, not because of lack of inspection or something like that.

Senator McCCLURE. In the 1989 budget request, did you have details that added up the \$197 million?

Mr. SIEGLE. Yes.

Senator McCCLURE. In next year's fiscal budget request, you indicated \$197 million, precisely the same number. Do you have the same level of detail that reflected that \$197 million?

Mr. SIEGLE. We have the backlog and report of inspections of each building.

Senator McCCLURE. Maybe it was unfair, but I was struck by the fact that the figure remained identical even though we provided \$20 million. I wondered if you have a list or used the old figure again.

Mr. SIEGLE. No; we have a list.

Senator McCCLURE. It came out to the penny?

Mr. SIEGLE. Well I think it was the closest million.

Senator McCCLURE. I have seen that pattern before, and I don't mean to be pejorative, but I was just struck by the coincidence of the figure.

Secretary ADAMS. Senator McClure, our regents have requested firmly that we do prepare such a detailed list, so it is available.

Senator McCCLURE. Could you provide that for the committee, the detail of the backlog for the last 3 fiscal years?

Mr. SIEGLE. Right.

[CLERK'S NOTE.—The submitted material is being retained in the subcommittee files.]

R&R FUNDING REQUIREMENTS

Secretary ADAMS. I think there is a more general problem here that I might mention. We went along for many years with a frankly inadequate amount of money appropriated for this purpose. In the meantime, we were continually adding buildings over the years. So the base was going up, and it wasn't really attended to—and didn't need to be for some years because, obviously, new buildings take a while before they need those repairs. We are attempting now to establish an amount which probably will then have to stay relatively constant.

Senator McCCLURE. I don't question the need. I question the background, the basis for the estimate of need. Because I think we do tend to ignore the depreciation of capital accounts. I think one of the greatest deficiencies in financial management can be in exactly that area. Do you have a 5-year plan that identifies the needs for repairs?

Secretary ADAMS. Yes.

Senator McCCLURE. You just happen to have it?

Mr. ANDERSON. Just happen to have a document called "Choosing the Future."

Senator McCCLURE. Could you provide a copy to the committee?

Mr. ANDERSON. Indeed.

Senator McCCLURE. Thank you. How does the \$229 million backlog relate to the \$67 million infrastructure needs identified in the S&E account?

Secretary ADAMS. Mrs. Suttenfield can address that.

Ms. SUTTENFIELD. The \$200 million-plus backlog relates solely to the bricks and mortar type of infrastructure, whereas the \$60 million plus that we show as the backlog in S&E are programmatic and operational backlogs. This is described on page 2.

Senator McCCLURE. Maybe you really didn't mean to be so careful in confining it to bricks and mortar. Is it more than just bricks and mortar? I don't mean to pin you down, but isn't it a broader need than just bricks and mortar?

Ms. SUTTENFIELD. Yes; that is exactly why we portrayed the unfunded requirement in the S&E account.

Senator McCCLURE. But is it all just building and structural maintenance?

Ms. SUTTENFIELD. Yes.

Mr. ANDERSON. Yes.

Mr. SIEGLE. It is also building systems, electrical, asbestos removal, et cetera.

GREENHOUSE GASES AND TROPICAL FORESTS

Senator McCCLURE. Mr. Chairman, just a couple of other questions and then I will submit the balance for the record.

I want to turn a minute to greenhouse gases and tropical forests, because it cuts across a variety of different issues that we are dealing with.

The Smithsonian scientists began the first-ever studies on how carbon dioxide affects tropical plants. These studies include raising common tropical species at normal and twice-normal concentrations of carbon dioxide. This research suggests that intact tropical forests can help reduce the rate at which atmospheric carbon dioxide increases over the next decade.

The next stage of this work will involve studying the effects of carbon dioxide in the upper forest canopy. The justification indicates that this is where most growth and photosynthesis occurs.

Has the research compared intact tropical forests to old growth forests?

Secretary ADAMS. Let me ask Mr. Robert Hoffmann, who is Assistant Secretary for Research, to address that.

Mr. HOFFMANN. This research, Senator McClure, is being carried out at two sites. One is the Smithsonian Tropical Research Institute in Panama, on Barro Colorado Island and on plots on the mainland in the—

Senator REID. What are they?

Mr. HOFFMANN. Barro Colorado Island and Soberania National Park, which is on the mainland. The second site is at our Environmental Research Center at Edgewater, MD, on the Chesapeake Bay.

This is a cooperative project among scientists of these two bureaus and the Smithsonian. The initial work was pioneered in Edgewater on the Chesapeake Bay, utilizing low-growing grass species because it was easier to manipulate those.

Having perfected the techniques there, we then transferred the work to old growth forests at Chesapeake Bay in order to be able to transfer the technology working with trees, and we are now at the point of having developed means of working with trees and taking it down to tropical forests and to other kinds of vegetation, low-growing, herbaceous, as well as trees, and repeating the work there in the tropics.

Senator McCCLURE. Well, I would like to give you just a little bit of background for the question, because there is a great deal of concern about the growing scientific evidence of global warming and both the role that carbon dioxide plays in the atmosphere in that phenomenon and what human activity may do.

I just noticed that one of the natural environmental organizations that have been very concerned about global warming also says planting 1 billion trees almost has nothing to do with it and they criticized the President's quota, which I guess is par for the course in politics. But I wonder how can it be, if indeed we are concerned about cutting old trees on one site, that planting 1 billion new ones has nothing to do with the problem.

Mr. HOFFMANN. I would say that a flat assertion that planting 1 billion trees has nothing to do with it or would have no effect is

certainly premature. We certainly do know that trees take up a large amount of carbon dioxide, and the question is what effect this would have on the magnitude of the problem.

One of the things we are discovering is that, as the carbon dioxide levels in the atmosphere of these experimental plots are increased, the rate at which carbon dioxide is taken up by the plants increases at a more rapid rate. And we don't yet know whether this is something that will occur in all kinds of plants, under all kind of conditions, or whether other plants will show a reverse effect. There is a lot we need to know. But there is some indication that, as carbon dioxide levels increase, plants will become more effective in tending to damp the rate of increase.

Senator McCCLURE. That has to do with carbon dioxide concentrations and not the degree of maturity of the tree?

Mr. HOFFMANN. That's right. The degree of maturity of the tree affects the rapidity with which it grows. Generally speaking, the more mature a tree the slower it grows in the sense of adding new material. But at the upper level in the canopy, the daily turnover of carbon dioxide in these leaves may tend to be quite high.

Senator McCCLURE. If I understand correctly, the phenomenon that follows is that the tree takes up the carbon dioxide and fixes the carbon in the tissues in the tree. As long as that tissue remains the same, the carbon is stored.

Mr. HOFFMANN. It is stored.

Senator McCCLURE. When the tree is destroyed, it depends on what happens to that tissue. If it is put into buildings, that carbon is removed from the atmosphere. If the tree is burned, it goes back into the atmosphere.

Mr. HOFFMANN. If the tree dies and falls and decays, the carbon dioxide goes in the atmosphere, but at a much slower rate. Burning is the big problem.

Senator McCCLURE. So, it depends on what happens to that mature tree. But it is also my understanding that, as the tree matures, the rate of uptake of carbon dioxide decreases.

Mr. HOFFMANN. It tends to decrease.

Senator McCCLURE. So, a mature forest probably removes less carbon dioxide from the atmosphere than one that is rapidly growing.

Mr. HOFFMANN. Yes; but, on the other hand, that matured forest is storing much more carbon dioxide.

Senator McCCLURE. It depends on what happens to the tree after it is no longer standing and growing. That is the point I was trying to make. And that is why I asked the question with respect to the intact tropical forest or old growth forest. Let's draw a parallel or an analogy and see if it is correct.

If you take an old growth forest and harvest the forest of healthy trees and the trees are then used in wood products, then that carbon is stored in the new structure in the portion of the tree that has not been rotted or burned. On the other hand, if you do replant a new forest or allow a new forest to grow adequately, it will remove more CO_2 from the Earth than the same acreage of mature forest would.

Mr. HOFFMANN. I presume, although I never studied the problem myself.

Senator McCCLURE. The other side of that would be, if in much of the area in Brazil, for example, the old forest is cut, and a new forest is not replanted or allowed to regenerate but cleared for agricultural purposes, then whatever portion of that forest is burned or rots, that carbon goes back in the atmosphere and there is no new forest there to remove it. And the tree is a more efficient form of fixing the carbon in the atmosphere than an alternative problem.

Secretary ADAMS. I think there is a special problem in the tropical areas in that most of the nutrients are stored in the living forest and there is very little in the soil itself, and that leads to very rapid runoff and destruction when the forest is burned.

Senator McCCLURE. I think there is no question of the concern that we have for old growth forest as well as all the other parts of that ecosystem when the forest is removed and not regenerated.

Mr. HOFFMANN. A third factor we are studying in Panama is the effect of forest removal on the regional climate, the local regional climate. And we have found through long-term monitoring that rainfall has declined 20 percent in this region, which tracks very closely to the rate of forest removal.

Now, we are not yet at the point of being able to demonstrate a causal relationship, although there have been some very interesting studies in Brazil which suggest precisely this: that as forest coverage is removed, it results in rainfall reduction.

Senator McCCLURE. Now I know why they have so little rainfall in Nevada. They don't have any trees.

Mr. HOFFMANN. There are a few other factors.

Senator McCCLURE. Mr. Chairman, I will submit the balance of my questions for a response in the record.

Senator REID. Senator Domenici.

THE SMITHSONIAN AND MUSEUM ACTIVITIES ACROSS AMERICA

Senator DOMENICI. Mr. Chairman, let me first ask a few very general questions with reference to the Smithsonian and the National Government's or country's policies, and then I would like to spend some time on the activities of the Smithsonian with reference to minorities in the country, which I understand you are quite familiar with in that the House inquired rather extensively regarding it.

First, it appears to me that, while the Smithsonian is clearly one of our flagships, the activities that are part of the broad category of museums in the United States are growing rapidly across America. Is that a true statement?

Secretary ADAMS. I think that is unquestionable, yes.

Senator DOMENICI. As a matter of fact, if you look at the Smithsonian's activities over a decade, museum-type activity across America is growing much more rapidly than the growth in the Smithsonian; exponentially, and not just a couple of times over.

Secretary ADAMS. Yes.

Senator DOMENICI. Now, do you at any time—if there was a time, it would seem like it would be now, take a look at the overall goal of the Smithsonian in a changing America?

Secretary ADAMS. I think we have had many discussions of it. And if you ask whether we have prepared sort of a long-term vision that looks out several decades or more, we haven't done so. I could certainly prepare one. I have previously touched on this.

THE ROLE OF MUSEUMS IN AMERICAN EDUCATION

Senator DOMENICI. Let me tell you why I ask the question. There are very few issues in the United States that have attracted attention as much as education, and unfortunately the deficiency in America's education system. We saw historic events, including a summit with the Nation's Governors, to develop a set of American goals with reference to education.

We have seen a huge deficiency in educating our children, generally speaking, but a serious deficiency with reference to science, math, and physics. An incredible American goal has been set for 10 years from now that by the year 2000, U.S. students will be first in the world in math and science achievement, to name just one.

I wonder if it is not incumbent upon an institution with as much prowess and visibility as yours to address that issue, and instead of coming here—and I'm not critical of your efforts—as a flagship you might look out across America and you might say, "Gee, would it be nice if we weren't run by the United States of America." I wouldn't be angry at you if you said that from time to time, because I believe there are some major American museums that are not run by the U.S. Government who have much more flexibility than the Smithsonian. They are probably building many more modern facilities at a much more rapid pace because they are doing everything in a modern way. You are still doing things the U.S. Government way, and those are very often inconsistent.

So, I wouldn't be upset if you were thinking that. But it does seem to me that from time to time it would be rather exciting if an institution of your quality would come before us and, instead of building on the past, say, "We are joining the mission in education, science, math, and physics, and we are going to have a special emphasis for the next decade not only in Washington but as a national mentor." Let me mention a number I've just heard, and you tell me if I am right. There are less than 150 so-called science museums in the United States, like the one in San Francisco, that are geared to educating children, and are dynamic and moving. Less than 150, I believe, of a major size, out of 5,500 museums, more or less. And yet 50 percent of the attendance in American museums is at the science museums. You might check the numbers of museums. If I am way off I apologize. I do know that the 50-percent attendance figure is right, though I may be off on the total number of museums.

I think that speaks to something. I just throw this out as a Senator concerned about moving and changing with times and coordinating activities as something that would excite me. The Smithsonian has missions you may reluctantly take on, and you may have some before you right now that you would not have prioritized, but we have prioritized for you. So that is my first point, and if you want to comment, fine. I would like to go over two other issues and I will try to be brief.

SMITHSONIAN ACTIVITIES IN NATIONAL EDUCATION

Secretary ADAMS. I agree with you completely. The fact is, however, that we have ourselves recognized that we have a major contribution to make in this area, and together with the National Academy of Sciences we have begun. And we house in our own buildings the National Science Resources Center that is devoted to precisely that subject. And I go around the country giving a number of talks about the crisis in the science and math education in this country. So it is an issue which I am personally very familiar and I have worked hard on.

I think museums have a responsibility which is not simply parallel with that of the schools but comes at the question of science education in a different way. They offer a form of alternative on the whole more often dealing with family groups rather than with cadres that are all at one grade level, let's say, although we get school groups as well. We are very much involved in that effort.

We have an exhibit opening in 6 weeks, a permanent addition to the National Museum of American History, which seeks to place in perspective for the country the meaning of the information age. It is an exhibit where we think millions of Americans over the years are going to have an opportunity to see and themselves work with material that is absolutely fundamental for our own competitiveness in the world and the advancement of the fundamentals of our own science and math education.

So, in that respect we are, I think, ahead of the curve and intend to stay there.

Let me touch briefly on the question of how we stand in relation to our sister museums in the private sector.

I think we have a different kind of responsibility that often will see us moving more slowly. I think you are right in your suspicion that in the private sector they can innovate more quickly, they can take more risks than we feel we can take. There are many things that work, frankly, better in the private sector.

On the other hand, take two examples that are very much before us at the moment. I think they point to a direction for the Smithsonian in the future that is consistent with the question that you are asking. Take first the Indian museum.

NATIONAL MUSEUM OF THE AMERICAN INDIAN

The specification in the legislation—and it is one that I personally welcome—is that we will work with, we will help train, we will provide guidance and advice for and exhibits, for Indian museums yet to be created in reservations and in pueblos across the country. It seems to me that that kind of transfer of expertise, and training function, and the loaning out of materials in our collection in order to make these real museums, is something that only a Federal institution is really likely to do well. And I think that is a function that we, therefore, will be expected to continue with.

AFRICAN-AMERICAN PROGRAMMING

The other comparable area that I mentioned has to do with our African-American responsibilities. There is an African-American

museum association with about 100 museums; many of them small, many of them in perilous financial circumstances. As we plan for whatever should be done on The Mall in Washington, we need to consider this existing network of activity. We need to work with and respect the needs of those institutions. And again I think we can visualize a kind of networking where we and our resources can be effective, not by managing, not by taking over, but by offering training opportunities and loan of exhibit materials and so on that will strengthen that network.

So I think there are fields like this where we do have a contribution to make that is distinctive.

CONSERVATION RESEARCH

The final one that I might mention still more briefly is we have a very strong conservation analytical facility which I think can be on the cutting edge of research in conservation, producing new findings, new techniques, that will be valuable across the country. I completely agree with the general thrust of your question, and we certainly have given that a lot of thought.

ROLE OF NATIONAL MUSEUM OF THE AMERICAN INDIAN

Senator DOMENICI. I thank you for the answer. I believe, Mr. Chairman, that there is a vital role that the new National Museum of the American Indian will furnish that the Smithsonian ought to consider inherently in a lot of areas. When you put together a new museum and you look at Indian America and you say, "Let's help train young Indian people in this mission as part of this undertaking," I think that is exciting, and I compliment you for it.

SMITHSONIAN QUINCENTENARY PROGRAM

There is a project within the Christopher Columbus quincentenary activity that is going to focus on the blending of three cultures in New Mexico. Perhaps you are aware of the project called American Encounters.

What is very frustrating, and I'm sorry my friend from Texas isn't here, is that you have named a Texan to run it. I really don't understand why you could not have found a New Mexican from one of our universities to head this exciting project. We have some fantastic experts that would be more in tune with giving you the straight scoop on the blending of our cultures. Perhaps the Texan, whom I do not know, will go beyond what most Texans think about New Mexico's three cultures, and he will do a good job.

Having said that, let me ask a couple of questions and give you my own observations, Mr. Secretary.

MINORITY HIRING AT THE SMITHSONIAN

With reference to minority hiring within the Smithsonian, I am not a wild man; I know that you will not hire minorities unless you seriously look for them. Let me tell you, I'm convinced that we have established a process, all of us, that the first time through in looking for people to hire for various jobs, we essentially have a good old boy network in America. It is looking to a certain school

that has been furnishing a certain type of graduate all the time, that is part of the network. You will not find qualified Hispanics or blacks using that process. There has to be a commitment to go back again and say, "Look, we always get graduates from those places, but can't we look again." And I urge that you do that. I'm not looking for a quota system. I'm not looking for mandatory affirmative action. But I believe that you are going to catch a lot more hell than you have this year if you don't show some progress in this area.

FISCAL YEAR 1991 BUDGET REQUEST

Now, having said that, let me give you my own version. You may be in bad shape in terms of catching up with past needs, and we ought to seriously consider how we can help you catch up. But I don't believe you can expect more than a 15-percent increase, which is what is in the budget this year, during these times.

It is confusing because part of the needs are capital, and part are operational. That is not any way to budget, but, if I read it right, you are going up 15 percent this year. I don't think you can expect 30 percent. You might get one chunk here and there to help you catch up, but 15 percent is a pretty good increase. In fact, very few agencies and departments are going up 15 percent.

SMITHSONIAN TRUST FUND RESOURCES

Having said that, I looked at your ancillary funding, called your trust fund activity. I don't know much about it, but I am impressed that you have gone up in your estimates \$48 million this year. You were at \$200 million last year. Where are we this year? We're at \$248 million. You are up \$48 million.

[CLERK'S NOTE.—See additional committee questions (question No. 141) for clarification of figures.]

Senator DOMENICI. I don't know what the limitations on using that funding are, but that is not Government money in the sense of appropriations. There may be some Government money for contracts, but it is outside money that goes into that fund.

Could you—not now because it takes too long—but could you provide for the record how that fund is limited, why we can only use so much of it, generally where it comes from, and do you have any notions on how it might be better utilized than it is currently structured? I have nothing else if you want to comment on that.

Secretary ADAMS. The trust funds of the Institution are at the moment in a situation of more desperate shortage than the Federal funding. And we might want to have our treasurer, Ann Leven, speak to that. She is here. Of course there are problems of restrictions on some of that. Some of it is grant money and many other things. But I think the general situation might be better described by our treasurer.

Ms. LEVEN. Our primary sources of trust funds are endowment income, of which approximately 50 percent is restricted funds, meaning that the donors have provided restrictions as to how the income as well as the principal can be used.

The second source is from magazine and membership activities. Those are general, unrestricted funds for the Institution. Another

major source is from our shops, mail order, merchandise activities, both on The Mall and off The Mall. There again these are unrestricted funds. We also have some limited fundraising capabilities which we are enhancing at this present moment. We have not been the beneficiary as many of the private institutions that you talked about, sir, of public largess. Our public has the view that the Congress provides most of our funding.

If you break down operating income, we receive 70 percent of our operating fund from the Federal Government and 23 percent from the private sector from the sources I have listed. Seven percent additional comes from Government grants and contracts for specific research work; most of that goes to our Smithsonian Astrophysical Laboratory in Cambridge, MA.

On the expense side, a major portion of what we do with our funds are what we call the Collections Acquisition, Scholarly Studies, and Educational Outreach Program expenditures: acquisitions, fellowships, special exhibitions, research, scholarly studies, and educational outreach. The issues of public outreach in terms of science education as well as minority education and minority outreach are handled out of those funds, administered by the various assistant secretaries.

The remaining funds go to support staff that we cannot hire on Federal funds—in some cases researchers for whom the Government salary scales are inadequate. It is necessary to include, as well as some administrative staff. So these are, if you will, the pluses and minuses on both sides of the trust fund ledger.

Mr. ANDERSON. I think we would be remiss not to point out that that \$48 million increase is comprised predominantly of the cost of goods sold.

Senator DOMENICI. What?

Secretary ADAMS. The cost of goods sold. In other words, our total income did go up by that amount. Most of that required immediate expenditures to restock inventories of items to be sold next year. So only the profit margin if you will—although that is not exactly the precise term because we are not for profit organization—represents expendable cash.

FEDERAL PROGRAMS IN GREENHOUSE RESEARCH

Senator DOMENICI. Let me make one last comment to the research director. It is amazing how much the Federal Government is doing on research into the greenhouse effect that nobody knows anything about. Last year some were speaking about the Federal Government not doing anything in greenhouse effect research, and that is because they looked at only one agency they assumed was doing greenhouse research. We had somebody take a look, and there were six agencies of the Federal Government doing major research—you weren't even listed, incidentally—and it was \$190 million at that point. This year it has gone way above that.

It seems to me we ought to guard against a real duplication of effort with the Federal Government spending money on this research. With the enormous increase in spending proposed for various agencies, everything from Interior NOAA, the Department of Energy, NASA, the National Science Foundation, and EPA that

somewhere you may find some contractual arrangements that would assist you in your research.

Mr. HOFFMANN. We sit on the intergovernmental Committee on Earth Sciences, so we are quite aware of what is going on in the other agencies. And they are aware of our research. We spend, compared to these other agencies, a very small amount, about \$3 million, not restricted to global warming but global change problems overall. So we are quite aware of that. And, in fact, we do work cooperatively with certain agencies.

Senator DOMENICI. Thank you, Mr. Chairman.

Senator REID. You are welcome.

STUDY ON WEST VIRGINIA FACILITY

Mr. Adams, in last year's justification you identified a need for an off-Mall facility for collection storage. During last year's hearing, we discussed the possibility of locating a collection storage facility outside of the high-cost metropolitan area of Washington, DC. One of the possibilities you were going to explore and report back to the subcommittee was in regard to the location of a storage facility in West Virginia. Have you completed your study?

Mr. ANDERSON. There is a letter that was addressed recently to Senator Byrd speaking to this matter. Let me see if I have a copy of it handy. Perhaps your staff also has a copy.

Here it is. Here is a copy that I can supply, Mr. Chairman.

Senator REID. I have it. I have not received it until a couple days ago. We will make this letter part of the record.

[The information follows:]

LETTER FROM ROBERT McC. ADAMS

MARCH 15, 1990.

Hon. ROBERT C. BYRD,
*Chairman, Subcommittee on Interior, Committee on Appropriations, U.S. Senate,
Washington, DC.*

DEAR MR. CHAIRMAN: This is a follow-up to our letter of December 1, 1989, which outlined a possible option for the establishment of a Smithsonian facility in West Virginia. Although implied in that letter, we were not as explicit as we should have been in commenting on the establishment of a collection storage facility. Collection storage needs are met presently in our museum and gallery buildings with off-Mall storage centered at the Museum Support Center and Garber Facility in nearby Suitland, Maryland. Over \$50 million have been spent on developing these facilities. Future development of this central site is planned. Access by Smithsonian curatorial and other staff and by visiting scholars is quick and convenient. Such would not be the case at a more distant location.

As reported in our December letter, a more appropriate candidate might be a warehouse and fulfillment center. To develop this idea we commissioned a study to examine the feasibility of relocating Smithsonian Mail Order and other Institutional fulfillment activities. A draft report has just been received. The Smithsonian's Treasurer will be meeting within the next few days with the Business Management staff to review the draft and to ascertain answers to obvious omissions in the data received to date.

A preliminary review of the document, however, supports the conclusion that at some future point we should relocate our current fulfillment activities. Several West Virginia sites appear viable as potential areas for relocation, assuming accessibility to a United Parcel Depot and Federal Express Service. Our consultant is researching this point right now as 90 percent of our "out" packages go via these carriers in keeping with customer preference.

The study is the first step in a detailed evaluation process that must be followed before any final decision is made. The mail order business is complex. We have

learned that other mail order organizations have taken as long as three years to assure a smooth transition.

Significant dollars (approximately \$300,000) will need to be allocated to perform this next level of evaluation. For example, careful analysis of renting versus purchasing our own building, new construction versus existing, etc., will have to be completed. Such issues have obvious site implications. Next we will need to determine equipment needs as mail order is highly mechanized. Finally, detailed construction, equipment and manpower budgets will need to be prepared. These budgets must be set against possible funding sources as currently all income earned by our mail order units goes directly into operating funds. Financing may be necessary.

We will proceed with all due diligence in examining the issues. We recognize the important implications of such a change and need to assure that careful attention is paid to each step in the evaluation. Our current lease, in Springfield, VA., expires in 1995. We are working against that date or sooner if possible.

Sincerely,

ROBERT McC. ADAMS,
Secretary.

Secretary ADAMS. Thank you, sir.

Senator REID. The question that I have, Mr. Secretary, is why did we just get this letter?

Secretary ADAMS. I am afraid I can't answer that.

Senator REID. This took place 1 year ago. Why did we just receive this letter?

Secretary ADAMS. Mr. Jameson, can you speak to that?

Mr. JAMESON. A large part is that the study we told you we were starting in our December 1989 letter has just been received in draft form and is being reviewed by our treasurer.

Senator REID. Well, I appreciate that. But, of course, that wouldn't have prevented you from answering the letter and reporting to the subcommittee prior to that. You could have given us a pretty decent response without that, right?

Secretary ADAMS. I think it is fairly plain that the impending hearing brought this to the top of the list.

Senator REID. That was my comment. On December 1, Chairman Byrd received a letter from Mr. Anderson notifying us that a warehouse and fulfillment center could be an appropriate candidate for a facility in West Virginia. The center would be responsible for processing mail orders for products available for sale from the Institution. Your letter indicated the matter was to be referred to a consultant for further evaluation and we could expect the results of this study in February 1990. This letter we just talked about covers part of that.

Secretary ADAMS. That's correct.

Senator REID. What should I tell the chairman about the status of the study and its expected conclusion? And when can we expect a formal transmittal of results?

Ms. LEVEN. The study is in my hand. It is on a preliminary basis because there are several very key determinants as to when and whether we can move.

A mail order operation requires a large warehouse facility. It requires unskilled labor for the most part but a high degree of mechanization. It also requires most particularly availability of United Parcel and Federal Express service. The consultant that we hired was able to provide us with a great deal of information except that he omitted the issues of Federal Express and United Parcel. We have now gone back to him to get a general appraisal of these

issues. It would appear that one town in particular satisfies this need but does not satisfy other needs.

What will be necessary in this case, having done a preliminary study, is to do further work as alluded to in the letter that you just received, work which will be at a cost of about \$300,000. The \$300,000 will have to be made available out of our operating budget, and, as Mr. Anderson has already noted, that budget is severely taxed this year.

The leases on the space that we currently occupy for the mail order operation do not expire until 1995. We anticipate it will be somewhere between 2 and 3 years, based on our discussions with other major mail order houses, before we could make an actual move. It will be necessary to do a much more detailed study than we have done. What we were able to do under the current study is find five cities that looked as if they might be potential candidates for a warehouse operation that could possibly meet our needs. These are five cities in West Virginia.

Senator REID. I am speaking for myself and not for the chairman, but it would seem to me that that would be money well spent probably.

Ms. LEVEN. It would be a tradeoff between program money within the Institution. That would have to be a judgment if you think that is how we should spend our private funds, sir.

ADDITIONAL COMMITTEE QUESTIONS

Senator REID. That is a decision you have to make. Thank you for your testimony. We have a lot of other questions and we are going to submit them to you in writing. We apologize for the court reporter not being here on time, but it put us about one-half hour behind what we anticipated. If you could prepare responses to these questions in the next 3 weeks, that would be appreciated. Again we appreciate very much your time and effort in preparing for this hearing, and we know during these times of budget constraints some of the programs that a lot of us feel very strongly about are getting pushed further and further back and this is of course a concern. We are proud of the reputation the Smithsonian has and are hopefully working together to maintain and build upon that.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Reduced Budgets

Question 1: Secretary Adams, according to staff discussions and recent newspaper articles, it appears the Smithsonian Institution is having funding difficulties or priority-setting problems. Last Friday's Washington Post article advised us that the Smithsonian is considering closing a "substantial" number of museum galleries due to lack of funds for security guards. The article stated that the lack of funds was attributable to a 5.6 percent cut in your FY 1990 budget request, including an unanticipated \$2.7 million water and sewer bill.

Mr. Adams, the Smithsonian Institution received appropriations of \$245,935,000 in FY 1989 and \$266,690,000 in FY 1990. That is an increase of \$20,755,000 (or 8 percent). There are many, many federal agencies that are having to deal with reduced budgets or are having to absorb higher costs. As a result, agencies are shifting priorities and taking efficiency measures in order to best serve public needs.

In another Washington Post article (dated January 30) which was published shortly after your FY 1991 budget was sent to Congress, you were quoted with regard to the Smithsonian's \$41 million increase over last year's appropriation. I will read from the Post's article, "It looks highly unusual in the current budget situation, but these increases are for uncontrollable costs, such as utility expense," Smithsonian Secretary Robert McC. Adams said of the \$41 million increase.' The article goes on to say that the Smithsonian is planning to cancel expanded summer hours unless private funding can be found.

Were you trying to imply that the Smithsonian's doors would be closed in the evenings because of escalating or unanticipated utility costs?

Answer: Utility costs are a significant part of the overall funding problem. For FY 1990 our appropriation was almost \$800,000 less than our request for utilities and communications. Presently, we are projecting a deficit of approximately this amount which when coupled with unfunded pay, water and sewer costs and GRH absorptions makes it impossible to reprogram funds within Administration and Facilities Services to maintain a normal level of guards.

Question 2: Mr. Adams, in fact, only 27%, or \$11,157,000, of the \$41,000,000 is attributable to what you term "uncontrollable costs." The remainder of the increase (\$29,843,000) is requested for program increases (such as the global change initiative, the American Indian Museum, the submillimeter and multiple mirror telescopes, and so forth).

Attention-getting rockets are being fired. However, we are confused as to what your current situation is and what your current action plan is. Are you proposing to close galleries, cancel

evening hours or both? Specifically, what is going to happen for the remainder of this fiscal year?

Answer: On the assumption that funds will be located elsewhere in the Institution, the Office of Protection has been authorized to make use of overtime and to hire 65 permanent and temporary guards to help restore daytime coverage in and accessibility to exhibit halls and galleries. It is expected that these corrective actions will be in place during Easter Week and during the period of June to Labor Day, both periods of heavy visitation. Such actions will cost an estimated \$410,000. It is not likely that a further \$525,000 can be reprogrammed to allow visiting hours to be extended into the evenings in the summer months.

Question 3: How does your FY 1991 budget propose to solve this dilemma?

Answer: The problem will repeat itself again in 1991 since the cause of the problem is a structural deficit totaling approximately \$1 million in the Office of Protection Services which has not been funded. This year, in addition to a previously identified structural deficit of \$455,000, the permanent budget reduction required by Gramm-Rudman-Hollings (\$318,000) and absorption of additional security costs at the Tropical Research Institute (\$150,000) have increased the deficit. Next year, the Office of Protection Services will have to absorb one-half of the expected pay raise in FY 1991, which will amount to approximately \$250,000.

Question 4: What galleries would be closed?

Answer: To the extent that the Institution can locate funds in FY 1990 to hire additional guards, we are optimistic that the need to close exhibit galleries will substantially decrease in the remainder of the fiscal year. However, some temporary gallery closings will continue to be necessary this year to adjust to daily guard absences for illness and other emergencies. Such closings were also necessary in past years, but the impact on the public is small. The Office of Protection Services (OPS) consults with museum directors and their staffs to identify galleries to be closed at these times. OPS bases the decisions in part on the configuration of spaces and the ease with which access to an area can be restricted, the popularity of an exhibit and the length of time it will be on view. Most museums elect not to close recently opened exhibits.

Question 5: How many FTEs and dollars would be saved by these gallery closings?

Answer: Until the corrective action mentioned earlier was put in place, it was estimated that approximately 95 FTEs and \$1,067,000 would be saved on an annual basis by reducing guard strength through attrition.

Question 6: Did Congress approve your Office of Protection Service budget requests for the past several years?

Answer: The Congress has provided consistent support for the budget requests for the Office of Protection Services in the past several years. In fact, the Congress provided additional funding in FY 1990 to address the requirement for an increase of 10 guard positions for the Quadrangle that the Office of Management and Budget had not allowed the Institution to request in the budget. For FY 1991, the Smithsonian had included \$455,000 to correct the structural deficit in the Office of Protection Services as part of its request to OMB, but the request was denied. The additional amount of \$150,000 needed to correct the absorption of increased security costs at the Tropical Research Institute was not included in the Institution's request to OMB, since these costs surfaced after the Institution submitted its request for FY 1991 to OMB. Since the request to OMB was prepared, the structural deficit has grown due to the Gramm-Rudman-Hollings reduction of \$318,000.

Question 7: In reviewing your FY 1990 and FY 1991 budget justifications, it seems that your estimates are coming in much higher than the actual FTEs used. For instance, we approved FY 1989 funding for 757 FTEs; however, the actual number of FTE's used in FY 1989 was 702. It appears that a similar situation occurred in FY 1988. Can you explain the difference?

Answer: In fiscal years 1988, 1989, and again in FY 1990, the Office of Protection Services has not had full funding for the authorized FTEs and so has not been able to fill the positions, because of annual absorption of the legislated pay increases, additional contractual security requirements at the Tropical Research Institute to protect staff and property during a time of political unrest in Panama, and inflationary increases in other objects categories of expense.

Question 8: Your estimated FTEs for FY 1990 are 764. Were the discrepancies between planned versus actual FTEs taken into consideration when this FY 1991 budget was formulated?

Answer: The FY 1990 estimate of 764 FTEs cited in the FY 1991 budget request represents the workyears allocated for the Office of Protection Services. Because of the erosion of resources discussed above and additional absorptions this year because of the Gramm-Rudman-Hollings sequestration and the Institutional assessment to cover the cost of paying the District of Columbia Government for water and sewer service, the Office of Protection Services does not expect to be able to staff up to the allocation level.

Question 9: What was the original museum summer schedule - what hours would you be open, on which days of the week?

Answer: The original museum summer schedule was to have the Air and Space, Natural History and American History museums opened until 9 p.m. seven days a week during Easter Week and from Memorial Day through Labor Day. This program also included the Museum of African Art and the Sackler Gallery during their first summer of

operations. In FY 1989, due to budget limitations in the Office of Protection Services, the extended hours of operations during the summer months were reduced. The three large Mall museums operated from 9:30 a.m. until 7:30 p.m. between June 16 and Labor Day.

For FY 1990 there will be no change to regular visiting hours, which are 10:00 a.m. to 5:30 p.m., seven days a week year round except Christmas Day (when all buildings are closed). The reduced funding we are experiencing will only affect our ability to extend the 5:30 p.m. regular closing time of the three major museums to 7:30 p.m. during Easter Week and from mid-June through Labor Day period.

Question 10: What would be the modified schedule and when would it begin? When would it end?

Answer: The only change to summer visiting hours is that we will be unable to extend hours beyond the regular closing time of 5:30 p.m.

Question 11: How many FTEs would be saved by the schedule change and how many dollars would be involved?

Answer: There are about 24 FTEs and \$455,000 required to hire guards to cover the summer extended hours. There are no FTEs associated with the other costs of extended evening hours (custodial overtime [\$25,000] and utilities [\$45,000]).

Question 12: What is your cost estimate related to evening hours which you are now proposing to eliminate and how much of that is associated with security guards?

Answer: Evening hours cost about \$525,000, of which \$455,000 is for security and the balance for utilities and custodial costs.

Question 13: Would you submit for the record an itemized listing of funding shortages related to the Smithsonian's evening summer hours?

Answer: Funding shortages related to the Smithsonian's evening summer hours include:

Temporary security personnel	\$455,000
Utilities	45,000
Custodial overtime	<u>25,000</u>
	\$525,000

American Indian Museum

Question 14: The Smithsonian is requesting \$19.7 million for the American Indian Museum. Salaries and operating expenses are requested at a \$11.6 million level. In addition, \$8.1 million is proposed in construction funds for American Indian Museum facilities.

I understand that the Smithsonian proposed a \$8,252,000 funding level to OMB for salaries and expenses. OMB responded with a \$11,618,000 level which is \$3,366,000 more than you requested. Is that correct?

Answer: The level of \$8,252,000 mentioned above comes from a special report which reflects FY 1991 budget information utilizing a "standardized" base. The use of this standardized base allows the Institution to "factor out" the effects of changes in the FY 1990 base level and of revised estimates in certain uncontrollable costs, resulting in the prominent display of the effects of programmatic changes from one stage of the budget process to succeeding stages. As indicated in the next question, OMB provided for program growth of \$3,366,000 beyond the request level for the National Museum of the American Indian as part of the FY 1991 passback.

Question 15: Mr. Adams, could you describe in general terms the items that OMB added to your budget request?

Answer: Of the total increase in programmatic growth between the FY 1991 OMB Request and the Congressional Request (\$3,366,000), almost 60 percent is related to three specific programs authorized by the legislation that established the National Museum of the American Indian (Public Law 101-185). These three programs are: (1) Native American Collections Documentation Research (\$1,000,000); (2) Special Review Committee on Native American Materials (\$250,000); and (3) Native American Staff Development and Training (\$707,000). The balance of the increase covered within the OMB allowance represents changes in the projected operating requirements related to the effects of FY 1990 Congressional action on FY 1991 and more recent budget projections based on the continuing planning process.

Question 16: A fund-raising office for the American Indian Museum is being proposed in your FY 1991 budget justification. The estimated cost for the office is \$670,000 and requires 11 FTEs.

Since this is a brand new activity, presumably the 11 FTEs would translate into more actual positions than 11 by the end of FY 1991. What is your staffing plan for the fund-raising office and why are so many people needed?

Answer: The FY 1991 increase will provide funding for 11 positions for the fund raising office for the National Museum of the American Indian. In addition, a reprogramming request currently pending before the Appropriations Subcommittees would allow 2 positions approved for FY 1990 to be redirected for this use bringing FY 1991 staffing for the fund raising office to 13 positions. The types of staff which will be hired to undertake the fund raising effort include a National Campaign director, several development officers, a special events coordinator, a membership director, and secretarial support. The staffing plan for the office envisions that there will not be more than 16-18 people, even at the height of the campaign which will occur during the period FY 1992-1993. This staffing level, in comparison to staffing for fund raising campaigns undertaken by other major non-profit organizations, is extremely modest.

Question 17: What would you hope to accomplish with this staff?

Answer: This staff will be responsible for raising, from non-Federal sources, one-third of the construction cost of the Mall Museum of the National Museum of the American Indian, in accordance with legislative mandate. Based on the current estimate of the Museum's total construction cost (\$106 million), the fund raising goal will be \$35.3 million.

Question 18: Are funds being raised at the present time?

Answer: Funds are not being actively solicited at the present time, pending the completion of an overall plan for the fund raising campaign in July 1990. The Institution has received a few small and unsolicited contributions (less than \$100 each) from interested Americans who have read about the development of the new Museum and have wished to express their support.

Question 19: The Smithsonian has used private monies to support fund-raising in the past. What is the justification for requesting federal funds for this purpose now?

Answer: Public Law 101-185, which established the National Museum of American Indian within the Smithsonian, contains a requirement that one-third of the cost of construction of the Mall Museum facility be obtained from non-Federal sources. Given this legislative mandate, it seems only appropriate that some modest level of Federal support would be provided to help meet the cost of raising those funds.

Question 20: Would this be a one-time fund raising effort?

Answer: It is expected that this fund raising drive will be a one-time effort in behalf of the National Museum of the American Indian and that the drive will take full advantage of the goodwill and generosity of the American people in connection with the new Museum's overall development.

Question 21 & 22: What would be the intended duration of this effort? Describe what activities would occur.

Answer: The fund raising drive will be initiated in FY 1991 and is currently expected to conclude by the end of FY 1995. The current development schedule for the Mall Museum facility calls for construction to commence in FY 1994. Non-Federal funds must be raised in order to release Federal matching funds. Present plans call for fund raising "wind-up" activities to occur in FY 1995, such as securing all payments on outstanding pledges, and preparing reports to donors, to volunteers and to the Congress on the campaign's achievements.

Question 23: Last year \$100,000 was provided by Congress for a training program in museum sciences for native Americans. This

year's justification seeks \$707,000 for native American staff development and training.

How is the \$100,000 being used in FY 1990?

Answer: The Native American Training Program in Museum Sciences is being developed by the Office of Museum Programs, the Institution's central museum training office. Regional Project Workshops will take place at three tribal museums and/or Native American cultural centers. Each organization will articulate a project they would like to undertake that requires technical assistance which the Smithsonian will provide. The chosen project will become a centerpiece of a Regional Project Workshop providing training opportunities for both staff at the host institution and others drawn from the region. Particular technical training, for example, collections management, exhibition design and educational programming, are the kinds of activities anticipated within the Project Workshop. Smithsonian Native American and other professional staff will serve as faculty. During FY 1990, the Office of Museum Programs will also expand opportunities for Residential Study Programs at the Smithsonian to train museum professional from throughout the United States in museum disciplines of particular relevancy to Native American collections, and with special emphasis on the participation of Native American individuals. (Note: Due to the effects of the FY 1990 Gramm-Rudman-Hollings reduction, FY 1990 appropriated funding for the training program was reduced from \$100,000 to \$99,000.)

Question 24: Is the total training program \$807,000 for FY 1991?

Answer: The total funding available for Native American training programs for FY 1991 will be \$806,000, representing the FY 1991 increase of \$707,000 and the FY 1990 Post GRH base of \$99,000. However, the Institution currently anticipates that the Training Program in Museum Sciences, approved in FY 1990, will continue to be administered by the Office of Museum Programs, and therefore, the funding of this program will be kept separate from the FY 1991 request to establish the Native American Staff Development and Training Program.

Question 25: How many native Americans would receive training under the \$707,000 requested increase?

Answer: The NMAI training initiatives for FY 1991 will include ten Native American "upward mobility" positions, interns and fellows, non-Smithsonian Native American museum professionals, and Native American Smithsonian staff associated with NMAI planning efforts. The Institution estimates at this time that as many as 50 to 75 Native Americans would receive training during FY 1991 as part of this increase.

Question 26: Are the Bureau of Indian Affairs and the Institute of American Indian and Alaska Native Culture and Arts

Development involved with your training program activities? If so, describe how?

Answer: While no formal affiliations exist as yet, planning is currently underway for consultations, potentially leading to collaborative relationships, with the Bureau of Indian Affairs, the Institute of American Indian and Alaskan Native Culture and Arts Development, and as well as many Native American and non-Indian organizations, regarding NMAI training activities.

Question 27: What are your funding and training plans for FYs 1992, 1993, 1994, and 1995?

Answer: The museological training program, presently under development by the Office of Museum Programs, and the NMAI training program for Native American upward mobility positions to begin in FY 1991, form the core of our program and will continue in FY 1992 and beyond. In addition, work/training exchanges with off-site institutions, education fellowships, off-site courses toward degree programs in relevant fields, professional development opportunities for Native American faculty, teachers and non-Smithsonian museum professionals are among the many training possibilities under consideration for future years. The Institution does not expect Native American participants in these programs to pay tuition and therefore anticipates seeking Federal funds for these activities.

Question 28: When are the museums in New York City and in Washington, D.C., expected to open?

Answer: The museum in New York is expected to open in mid-1992. The museum in Washington, D.C. is planned to open to the public in 1998.

Question 29: What kind of positions would be established that would benefit by this training?

Answer: Among the first positions to be established will be those associated with collections management, community outreach and training, facilities/construction, program planning, development, technological applications, research, administration and international issues.

Question 30: How many positions, such as these, will be needed at each museum?

Answer: Ten such positions have been identified for FY 1991. Planning for personnel requirements for future years is currently underway in anticipation of the appointment of a director for the NMAI.

American Indian Museum Construction

Question 31: In 1991 the Smithsonian is requesting \$8,130,000 for construction of American Indian Museum facilities. The facilities would be situated in three locations. A major museum building would be constructed on the Mall in Washington, D.C. A satellite exhibition and education center would be located in a portion of the Old United States Custom House at the tip of lower Manhattan in New York City. A collection storage and research facility would be located in Suitland, Maryland.

The Statement of Managers which accompanies the Conference Report on H.R. 2788, the FY 1990 Interior and Related Agencies Appropriations Bill, included the following:

"With regard to the Museum of the American Indian, the managers are concerned about the accuracy of the cost estimates for construction of the proposed Museum facilities, and the potential for significant increases in these estimates. Future budget submissions should contain a detailed project cost baseline before construction funds are requested, and should also reflect cost-sharing proposals using non-Federal funds."

Secretary Adams, has your organization submitted a detailed project cost baseline to the subcommittee?

Answer: Public Law 101-185 places a limitation on obligation of Federal funds by the Smithsonian "for actual construction of any facility under this section until the 60th day after the date on which the Board of Regents transmits to Congress a written analysis of the total estimated cost of the construction and a cost-sharing plan projecting the amount for Federal appropriations and for non-Federal contributions for the construction on a fiscal year basis." It is the Institution's intention to provide the Congress with all requested information. Once planning for each of the buildings is completed, information can be developed on costs. Based on the current scope and planning schedule for the Custom House, the construction cost estimates and cost sharing projections will be available this summer. The Institution is requesting construction funding in FY 1991. These funds would be obligated by contract award around March 1991.

The Smithsonian currently expects to complete planning for the Suitland facility in 1991 and will request funds to complete the design and begin construction in FY 1992. Planning for the Mall building will be complete in FY 1992; construction funds will not be requested until FY 1994.

Question 32: The State of New York and New York City have pledged to contribute one-third of the cost, or up to \$8 million apiece for renovation of the Custom House for museum use. When will the State and City contributions be made available?

Answer: The Institution has held discussions with both the State and City. The City is prepared to take the lead in developing a memorandum of understanding with the Institution that would provide necessary funding in a timely fashion and provide the City

and State consultative opportunities throughout the project. We anticipate initial receipt of City and State funds under this arrangement during FY 1990 and the balance in FY 1991.

Question 33: Exactly what space will be renovated for use by the Smithsonian?

Answer: Smithsonian staff and members of the Board of Trustees of the National Museum of the American Indian have jointly agreed that the 82,500 square feet provided in the enabling act (P.L. 101-185, November 28, 1989) should comprise the rotunda level within the Custom House, to be used mainly for exhibition and education purposes; shared use of the building's loading dock and auditorium with GSA's other tenant-occupants; and staff office space, rounding out the 82,500 square feet envelope, located on the building's first level.

Question 34: What is the status of the Custom House planning and design which was funded in FY 1990?

Answer: The Institution is presently negotiating a planning and design contract for the Custom House project with the architectural and engineering firm selected by the General Services Administration to design the renovation of the other six and one-half floors of the building.

Question 35: When do you expect to have the planning and design phase completed?

Answer: The Institution expects to complete the planning of the Custom House space, including construction cost estimates, in late June or early July. Design is scheduled to be complete by December 1990.

Question 36: When do you anticipate that the construction contract will be awarded and signed?

Answer: The Smithsonian plans to request bids for construction in early January 1991, and expects to award the contract by the end of March 1991.

Question 37: In addition to the American Indian Museum you are making plans for an Air and Space Museum Annex for approximately \$330 million and an African-American proposal. Is it fair to assume that the African-American endeavor will cost as much as the Air and Space Museum Annex?

Answer: It is too early to estimate the cost for such a facility since the current task of the African American Initiative is to ascertain what kind of organizational shape this initiative should take, and what physical structure would be reflective of the results of that investigation. If, based upon the recommendations of the Advisory Committee, the Board of Regents recommends a

separate African American museum, then the Institution would prepare cost estimates for design and construction for the facility.

Repair and Restoration versus Construction

Question 38: Let's turn from your construction plans to discuss the Smithsonian's Repair and Restoration of Buildings program. It seems that proposals and commitments are being made to construct new museums, storage buildings, annexes, research centers, and other facilities without considering the total Smithsonian picture. It appears that in the headlong rush to build new facilities, your backlog of maintenance and restoration needs is being neglected.

Secretary Adams, I understand that your request to OMB for Repair and Restoration of Buildings was \$35 million. However, the figure that came back from OMB was \$28.7 million. Is that correct?

Answer: Yes, the Smithsonian request to the Office of Management and Budget was \$35 million for Repair and Restoration of Buildings. OMB allowed the Institution to request \$28.7 million for R&R in the FY 1991 budget request to the Congress. Even though OMB has supported the expansion of the R&R program for the past several years, the realities of the current economic climate have forced it to hold the R&R account to a slower rate of growth than the Institution believes is necessary. It should be noted, however, that, with both OMB and Congressional support, the annual appropriation for Repair and Restoration of Buildings has more than doubled in five years from \$12.4 million received in FY 1986. The Institution will continue to seek OMB and Congressional support to reach the optimal level of \$35 million per year for R&R funding.

Question 39: Your FY 1991 budget justification tells us that the past years' funding level for maintenance, repair, and preservation of buildings have not kept pace with the rate of deterioration. In addition, heavy public use of buildings and the demands on building equipment and systems for constant temperature and humidity levels to protect the National Collections exacerbate the natural aging process of building materials. The Smithsonian also has an obligation to ensure a healthy and safe environment for visitors and staff.

What is your current backlog estimate?

Answer: The January 1990 estimate of the current backlog is \$229,069,000.

Question 40: Does your FY 1991 request of \$28,656,000 provide funds to adequately meet all of the Smithsonian's repair and restoration needs for FY 1991?

Answer: The \$28,656,000 does not provide funds to meet all of the most urgent repair and restoration needs for FY 1991. The Institution sought a funding level of \$35,000,000 in the budget

request to the Office of Management and Budget. The lower amount will cause deferral of a number of important projects to a future year. Any repair project that is deferred is naturally subject both to the further ravages of time and cost escalation.

Question 41: Will additional projects be added to the backlog this year?

Answer: Our definition of the backlog of essential maintenance and repair includes all existing repair, restoration and code compliance requirements for which funding is not yet available. New projects will continue to be added to the backlog each year as a result of annual or biannual inspections by staff in the Office of Plant Services, the Office of Environmental Management and Safety and outside technical experts. The natural aging process of the buildings, exacerbated by heavy public use and demands for exacting climatic conditions contributes to the ongoing deterioration of the building components, systems and equipment. As conditions worsen, or as new life safety and health regulations require modifications, projects for which funding is not available are added to the backlog listing.

Question 42: What sustained funding level would be required each year, say for the next 10 years, to eliminate the backlog?

Answer: The Institution needs a consistent funding level of approximately \$35 million annually (in FY 1991 dollars) in order to be able to eliminate the backlog within eight to ten years. While a larger annual increment would speed completion of the work, the increased volume of work would require a substantial increase in staff to manage and implement the program and cause unacceptable disruption to the Smithsonian's public programs.

Question 43: The nation's people come to Washington, D.C., to see the magnificent Smithsonian Institution and its treasures. It is a major attraction to our nation's capital. The Smithsonian museums contain artifacts not only from our country but also from other countries around the world, reflecting the diversity and origins of America's people.

Will we one day soon be standing in the middle of the Mall looking at our Smithsonian buildings but unable to enjoy and to learn from the contents because the buildings are unsafe and unusable? Funding is limited and choices must be made.

In the construction section of your budget justification (page 293), the following statement is made: "The Institution is currently considering a facilities expansion or improvement program that may total \$600,000,000 over the next 10 years." Would you explain what this statement means?

Answer: During FY 1989 the Institution assembled a long range facilities development plan to address its most urgent program needs. The plan projects how the projects might be spaced over a ten year period and identifies funding that might be required to

achieve these goals. The total, \$600,000,000, represents an order of magnitude figure only, as the Institution has not yet fully developed project scopes necessary to establish firm cost estimates for many of the projects. Planning is underway for several of the projects in the near term using construction planning funds appropriated beginning in FY 1989. The Institution will use planning funds requested for FY 1991 and future years to define the project scopes, cost estimates and schedules, for projects such as the Air and Space Museum Extension, the General Post Office Building, the Collections Management Centers and the Tropical Research Institute.

Question 44: Mr. Adams, do you agree with me that it is more important to take care of what we have than it is to build more buildings which will bring even greater maintenance and staff demands on our limited financial resources?

Answer: While it is true that the Smithsonian's existing physical plant is one of its most valuable assets and, clearly, its proper maintenance has to be a high priority, the Institution's collections, staff and visiting public are three additional assets which cannot be set aside categorically. Proper housing of our nation's patrimony (which, of necessity, grows every year), providing proper space for our staff so that their productivity is not compromised, and enabling the public to have improved access to our holdings must also be accorded high priority. To do less would be to shirk essential parts of our stewardship responsibilities which the Congress entrusted to the Smithsonian when it accepted James Smithson's bequest.

Question 45: What difficulties do you foresee in delaying construction on projects, such as the American Indian Museum; the two Rock Creek Projects; or the Conservation Analytical Laboratory, while you reduce your maintenance backlog?

Answer: Each of the major items included in the facilities planning, repair, restoration, and construction portion of our budget has already been subjected to scrutiny by three levels of management, within the Smithsonian, by the Administration's Office of Management and Budget, and by the Institution's Board of Regents. Each represents a carefully considered step toward fulfilling responsibilities which devolve upon the Smithsonian from its initial charter and from subsequent enactments by the Congress. Categorically to abandon many of those responsibilities in favor of one objective alone would unbalance the resulting program and create a variety of other backlogs -- e.g., in progress toward achieving the unanimously enacted National Museum of the American Indian; in integrating the presentation of plant, animal, and insect life toward improved public understanding of global change; or in providing improved conservation of the collections we hold in trust for future generations.

Inspector General's Report

Question 46: The Inspector General's Semiannual Report for the period April 1, 1989, to September 30, 1989, reported some significant problems, abuses, and deficiencies. Based on the audits, the Inspector General concluded that the most significant problems existed in the Smithsonian's effort to achieve full inventory control over its large, valuable collections; the procedures used to control inventories and cash receipts in the Smithsonian museum shops; and the procedures used by the Smithsonian to review and process petty cash payments.

What measures have been taken to inventory and to establish controls over your collections?

Answer: The Inspector General's report refers to audits of the Smithsonian's two largest museum collections, that of the National Museum of Natural History and the National Museum of American History. Those audits recognized the existing inventory records already created for these collections, but recommended a total of thirteen action steps management should consider to ensure that controls over the data and the objects they refer to remain fully effective. Smithsonian management agreed with each of these recommendations, and sought approval from OMB for additional funding of \$783,000 to implement these recommendations as part of the FY 1991 budget. Although this funding was not approved as part of the FY 1991 OMB Passback, the Institution will continue to seek approval for these audit recommendations in the future.

Question 47: What actions have been taken to eliminate the suspected fraudulent acts involving the museum shops?

Answer: The Museum Shops inventory shrinkage in January, 1989 was 5.1 percent of sales. The retail industry average for specialty shops with over \$20 million in sales was 1.6 percent in 1988 as reported by the National Retail Merchants Association 1989 edition of "Financial and Operating Results of Department and Specialty Stores."

In response to the January, 1989 inventory result, Smithsonian management restructured reporting relationships within Museum Shops, enlisted the assistance of the Institution's Acting Inspector General, and took concrete actions to improve the protection of Smithsonian cash and merchandise assets. Specific actions have included the hiring of a Loss Prevention Manager with extensive retail security experience; the identification and protection of merchandise especially subject to high shrinkage; the installation of new locks, security alarms, mirrors and locked doors in public areas, merchandise stock rooms and cash handling areas; and several major changes in inventory procedures.

An improving trend began in September, 1989 when the shrinkage decreased to 2.49 percent of sales for the period January, 1989 - September, 1989. The shrinkage results for the most recent inventory for the period from September, 1989 to January, 1990 were 0.88 percent (about one half of the industry average). In a March

1, 1990 memo, the Smithsonian Institution Office of Inspector General determined after a post-audit of the January, 1990 Museum Shops physical inventory reconciliation that the 0.88 percent inventory shrinkage was properly reported.

In order to achieve this significant improvement expeditiously, priority has been placed on inventory shrinkage reduction through a series of awareness meetings at all levels in the Museum Shops organization. To avoid complacency with the interim success, a series of meetings and follow-up actions will be taken to maintain the appropriate emphasis on these matters.

Question 48: What procedures have been put in place to prevent small purchases and petty cash embezzlements?

Answer: The Institution uses a four tiered system of controls to guard against fraud and embezzlement from the small purchase order and petty cash payments systems.

The first tier is the separation of the responsibility for authorizing an expenditure from that for controlling the funds to be used. The Office of Procurement and Property Management and the Office of Accounting and Financial Services maintain lists of the approved individuals throughout the Institution who are tasked with these separate responsibilities. The standard forms used in pay systems are checked when first initiated to determine that only authorized individuals have signed each required approval.

The second tier relates to enforcement of the policies, rules and training established to transact petty cash vouchers and small purchase order invoices. Petty cash and small purchase order documentation is scrutinized by trained technicians for compliance with all policies and rules to detect unauthorized purchasing.

The third tier is the financial reporting cycle. Each organization receives monthly reports of their transactions. Administrative Officers reconcile the unit transactions shown on these reports with their own records. Any discrepancies are reported to the Office of Accounting and Financial Services (OAFS) for research and resolution. This cycle ensures a constant feedback on the accuracy of the financial reports.

The last level of control is the audit phase which includes both informal and formal programs. Audits are performed by OA&FS and the Inspector General as well as external agencies such as the DCAA, GSA, and the Institution's CPA firm, Coopers & Lybrand.

Global Change Research

Question 49: Our nation is continuing to become increasingly concerned about the global change issue. The Committee on Earth Sciences (CES) is the coordinator of the current federal global change activities. On February 6 of this year, the Senate passed unanimously S. 169, the National Global Change Research Act. The

intention of this Act is to pull together national goals and priorities for global change research. This new legislation assigns responsibility to the CES for establishing national goals, defining roles, reviewing budgets, and reporting to Congress.

Global change research is one of your initiatives in the FY 1991 budget request. How much of the \$41 million increase is tied to your global change initiative?

Answer: The Smithsonian's FY 1991 budget request includes increases totaling 14 workyears and \$1 million in the Salaries and Expenses account for global change research initiatives at the Smithsonian Astrophysical Observatory, Tropical Research Institute, Environmental Research Center, National Zoo, International Environmental Science Program, Museum of Natural History, and the Air and Space Museum.

In addition, two construction projects would provide facilities to support research in, and public awareness of, global change issues. In the Construction account, the Institution requests \$1.55 million to construct a research vessel to enable the Smithsonian Tropical Research Institute to conduct ocean-based research on marine systems at sites extending from the Atlantic Coast of Columbia to the coast of Costa Rica. In the Zoo Construction account, the Institution requests \$3 million to fund the first phase of the Smithsonian Tropical Science and Global Environmental Science Gallery at the National Zoological Park to educate and inform visitors about tropical biology and global problems.

Question 50: Why wasn't the total for this initiative summarized in the budget justification so the Subcommittee could have a comprehensive understanding of this initiative and your total proposed resource requirements for it?

Answer: Although a summary of FY 1991 global change research increases appears in the Introduction section (pp. 11 and 12) of the Institution's budget justification, the line-item presentation of the document often does not lend itself to highlight pan-Institutional initiatives in a comprehensive manner. The following summary of FY 1991 increases for global change research provides this information:

Smithsonian Astrophysical Observatory (SAO) - 2 workyears and \$180,000. Worldwide use of chlorofluorocarbons, which are chemicals used for refrigerations, insulations, and other purposes, and emissions of carbon dioxide, nitrous oxides, and methane are believed by scientists to be linked to the partial destruction of the ozone layer. SAO proposes to hire two atmospheric physicists to develop instruments to make atmospheric measurements from balloons and spacecraft and carry out laboratory studies of the spectra of key molecules associated with ozone destruction found in the atmosphere. These studies will contribute to the development of strategies to curb the depletion of the protective ozone layer.

Smithsonian Tropical Research Institute (STRI) - 2 workyears and \$106,000. Tropical deforestation threatens the extinction of many species before science understands their ecological roles and

explores their possible benefits. STRI proposes to hire a scientist and a technician and to enhance its ongoing global change research including long-term physical and biological monitoring, and investigation of biological and geological mechanisms of change. These studies will contribute to the understanding of the effects of deforestation on atmospheric water cycles, the production of greenhouse gases, and siltation of coastal marine habitats.

Smithsonian Environmental Research Center (SERC) - 1 workyear and \$150,000. As part of global change research, SERC is studying the effects of increased atmospheric carbon dioxide concentrations and the interactions of the atmosphere with the soil and the forest canopy. SERC is also working with STRI to compare data on the interaction of the atmosphere with temperate forest ecosystems at Edgewater with similar data from the tropical forests on Barro Colorado Island in Panama. These initiatives will generate immense volumes of data. SERC proposes to hire an ecosystems modeler to manage and analyze both data bases and to upgrade their computer system. The proper management and analysis of these data bases are essential for accurate reporting of research results and for assisting scientists in developing future solutions to the problems associated with global change.

National Zoological Park (NZP) - 2 workyears and \$100,000. Recent evidence of population declines in migratory landbirds in North America are thought to be due directly to the habitat destruction and degradation that has occurred in tropical forests, the wintering grounds of many North American birds. The NZP proposes to hire an avian ecologist and a biotechnician to study the effects of habitat destruction on migratory bird populations. This research will provide important data on methods for mitigating the effect of forest loss on songbird populations.

International Environmental Science Program - 2 workyears and \$134,000. The collection of long-term data in tropical environments is increasingly important for understanding global change. The IESP proposes to hire an environmental engineer and a data manager to expand its physical monitoring at STRI. Physical monitoring of meteorological and hydrological variables is performed at Barro Colorado and the Galeta marine laboratory. Researchers plan expansion of physical monitoring to other sites in the San Blas and Naos Islands and in the Perlas Islands in the Pacific. These studies will enable researchers to understand better how tropical habitats respond to changes in physical parameters such as rainfall, temperature, sea level, and the mix of gases in the atmosphere.

National Museum of Natural History (NMNH) - 4 workyears and \$259,000:

-- The Amazonia Biological Diversity Program - 3 workyears and \$134,000. Tropical forests, especially in Brazil, are being destroyed by human alteration, primarily burning. NMNH proposes to hire a senior scientist, a program administrator, and a secretary for its Amazonia Biological Diversity Program to assume administrative responsibilities for the Biological Dynamics of Forest Fragments (BDFF) project transferred to the Smithsonian Institution in FY 1989 from World Wildlife Fund, and for its Biological Diversity of Tropical Latin America Program (BIOLAT).

Under BDFF and BIOLAT, scientists study the changes that occur in the rain forest ecosystem as human development encroaches upon it. Researchers inventory the flora and fauna in a series of isolated forest reserves and measure the physical changes in the understory microclimate and soil moisture. Biotic and physical changes are then related to the size of the forest reserve under study. Resulting analyses will provide guidelines for the integration of conservation and economic development.

-- Coastal Oceans Research - \$50,000. NMNH pursues basic research on environmental change in coastal ecosystems at a number of sites. NMNH seeks funding to establish a weather station on the Belize Barrier Reef site, funding to cover travel costs for a specialist to install the weather station, and funding to lease the site for an additional three months to complete a full year. The weather station will allow real-time transmission of data on climatic and ocean conditions using measurements of wind speed, wind direction, air temperature, solar radiation, water level, surface water temperature and rainfall. These data will help to document changes over the long term in the climate and ocean and the impact of these changes and catastrophic events, such as hurricanes, on the animal and plant populations in the Caribbean reef ecosystems. Such local changes linked to changes in rainfall and temperature globally, are integral to analyzing the greenhouse and global warming trends. The Belize site will be integrated with similar sites operated by STRI (see above).

-- Global Change in Arctic Ecosystem Research - 1 workyear and \$75,000. Global change is not restricted to the tropics. Owing to exceptional preservation, Arctic and sub-Arctic archeological sites can yield important data on the impact of long-term climatic change on natural, biological and cultural systems. The NMNH proposes to hire an Arctic archeologist. Research will concentrate on two aspects of global change. In the climatically rigorous Eastern Arctic, researchers will look for signals of climatic and environmental change in cultural and demographic-territorial change of Indian and Eskimo cultures over the past 10,000 years. In the Western Arctic, researchers will place emphasis on social and technological factors of change seen through the dynamic interaction of Alaskan and Siberian cultures. The results of both studies will be linked with research results from other circumpolar areas to develop a general model of circumpolar cultural response of changing global environments.

National Air and Space Museum - 1 workyear and \$71,000. Scientists in NASM's Center for Earth and Planetary Studies (CEPS) apply the experience and techniques they have gained from various remote-sensing investigations of terrestrial deserts to analyze changes in our planet. NASM proposes to hire an atmospheric scientist to make the atmospheric corrections necessary to interpret remote-sensing data and to enhance its capability for monitoring global environmental consequences of human activity, such as desertification, deforestation, and soil erosion, as well as climate change and the decline of the stratospheric ozone.

Question 51: Is the Smithsonian a member of the Committee on Earth Sciences?

Answer: The Smithsonian is not a member of the Committee on Earth Sciences. The Smithsonian is an independent trust instrumentality of the United States. Given our non-governmental charter, formal membership in any federal inter-agency committee is inappropriate. We are, however, observers; and we remain involved with the Committee in that status.

Question 52: Please explain the Smithsonian's role in relation to other agencies that are assigned responsibilities for global change research.

Answer: Although the Smithsonian has no assigned agency responsibilities for global change research, our principal research programs focus on biological sciences, systematics, ecology, and biodiversity studies which most agencies are not involved in. To the extent that earth and atmospheric studies are carried out by the Smithsonian (at the Smithsonian Astrophysical Observatory and the National Air and Space Museum), they involve research that complements that carried out by other agencies. Such Smithsonian research is well coordinated with and sometimes done in conjunction with other agencies.

Question 53: What unique qualifications does the Smithsonian have in this area?

Answer: The Smithsonian Institution is ideally positioned to undertake important research initiatives in the field of global change by building upon its current programs. With more than 150 scientists in a variety of biological and physical science disciplines (coupled with its stewardship over large, protected areas in both the tropical and temperate zone), the Institution can undertake comparative studies to assist in understanding the complexities of global problems.

For example, the Institution's International Environmental Science Program has been monitoring both biological and physical processes for more than 20 years and it currently possesses an incomparable set of data for both tropical and temperate sites. The research at the Smithsonian Tropical Research Institute (STRI) and the Smithsonian Environmental Research Center (SERC) will exploit and build upon the unique data already in the possession of the Institution. The permanent nature of the Smithsonian's study sites at STRI and SERC fit the criteria for global monitoring centers cited in the National Academy of Sciences report and endorsed by the Federal Coordinating Council for Science, Engineering, and Technology (FCCSET) Committee on Earth Sciences. Moreover, the National Museum of Natural History is the world's largest repository of data and expertise in systematic biology, a science essential to understanding and conserving biological diversity on the planet.

The Institution's proven ability in sustaining long-term research at permanent sites, and to maintain systematic data bases, is a crucial function that distinguishes the Smithsonian from Federal organizations and most universities involved in such research.

The Smithsonian Institution also plays an important role in disseminating information on global environmental issues, through exhibitions in the National Museum of Natural History, the National Air and Space Museum, and other venues for public programming. A very recent addition to the Smithsonian's contribution to educational programming in this field is the Office of Environmental Awareness, a newly-established component of the Institution's International Center. The Office of Environmental Awareness works with scientists and educators in the bureaus to answer public inquiries, review recent environmental developments, and design outreach programs for the general public and specialized audiences to increase public understanding of environmental issues.

Question 54: What kind of global changes issues have you been involved with in the past?

Answer: The traditional expertise of several Smithsonian bureaus in the fields of environmental and biological research, including the Tropical Research Institute, the Environmental Research Center, the National Zoo, the Museum of Natural History, and the International Environmental Science Program have been strengthened over the past several years. With tropical biology and biological diversity research as important priorities for the last five years, these long-standing programs have been reinforced and several major new initiatives have been started, including the Smithsonian/Man and the Biosphere Program, the application of satellite remote-sensing data analysis to global environmental issues, and the chemical analysis of atmospheric molecules in the stratosphere.

Both Congress and the Office of Management and Budget have strongly supported Smithsonian initiatives in these areas. During the FY 1990 appropriations process, Congress added a total of \$641,000 (after the FY 1990 Gramm-Rudman-Hollings reduction) for Global Change Research projects, including the Climatology Initiative and Canopy Access System at STRI; the Comparative Study of CO₂ at SERC; the Cryobiology Initiative and Endangered Species Breeding programs at the National Zoo; Remote-Sensing Applications to Global Environmental Studies at NASM; the Smithsonian/Man and the Biosphere Program; and other Institution-wide support for Global Change Research. In the FY 1991 OMB passback, OMB approved \$1 million in new funding for the Institution's Global Research programs, including funding for Atmospheric Chemistry Studies at SAO; Biological and Geological Mechanisms of Change at STRI; a Migratory Bird Survey at the National Zoo; the Long-term Physical and Biological Monitoring Program of the International Environmental Science Program; the Amazonia Biological Diversity Program, Coastal Oceans Research, and Arctic Ecosystems Research at the Museum of Natural History; and Global Studies Applications of Remote-Sensing Analysis at NASM.

As described in a report, Environmental Activities at the Smithsonian Institution, 1988-1989, prepared by the Office of the Assistant Secretary for Research, Smithsonian bureaus are currently working on more than 160 research, education, and public service projects in the area of global environmental issues. (The Institution will provide a copy of this report to the Subcommittee.)

Finally, the Institution has very recently strengthened central Institution-wide support for these programs through the establishment of the Office of Environmental Awareness in the International Center. The Office of Environmental Awareness will work with experts from both within and outside the Smithsonian to disseminate research results and information related to environmental conservation for both the general public and specialized audiences. This pilot program will complement existing Smithsonian global change research and bureau-based educational programs by focusing on specific environmental topics and audiences.

Question 55: The Smithsonian is not a member of the Committee on Earth Sciences. The Smithsonian does receive grants and contracts from various government agencies to work on projects for which it has special expertise. Why should the Smithsonian assume line responsibilities for a research effort of this sort; couldn't agencies in the Committee on Earth Sciences contract with you for assistance on global change issues?

Answer: The Smithsonian's line responsibility for global change research stems out of our past research experience and capacity of scholars to carry out such research. On occasion agencies do contract with the Smithsonian; for example, the Mineral Management Service has contracted with STRI to conduct research on a major oil spill in a coral reef mangrove environment in the Caribbean.

Cultural Diversity and Cultural Equity

Question 56: On November 16, 1989, the Committee on Government Operations of the House of Representatives issued a report, "The Challenge of Cultural Diversity and Cultural Equity at the Smithsonian Institution." The report addresses employment trends with regard to minorities at the Smithsonian Institution. I would like to read the following from their report:

"Documents and testimony received by the subcommittee reveal that although minorities comprise approximately 38 percent of the Smithsonian's work force, the great majority of these workers are clustered in low paying, semi-skilled and unskilled occupations. Minorities are grossly underrepresented in senior level management and professional positions, and virtually nonexistent on the Institution's many advisory boards, committees and councils. The pattern of underrepresentation at the Smithsonian begins at the level of its highest policy making body, the Board of Regents, and permeates every tier of the organization."

The report goes on to say:

"This virtually "minority-free hierarchy" at the Institution not only eliminates the views and sensibilities of minorities from shaping the complexion and direction of policy making at the Smithsonian, but also excludes their input in major decisions that influence the tenor of scholarly research,

the classification of its collections, the installation of permanent exhibits, and the preservation of historical sites."

Page 21 of the Smithsonian Institution's budget justification addresses your special employment initiatives - the FY 1989 "Quick Hire" program and the FY 1990 "Step Up 90" upward mobility program. Your justification states that you are planning to begin an "Affirmative Culture Transition" program.

How successful have your FY 1989 and FY 1990 employment programs been?

Answer: In FY 1989 we began the "Quick Hire" program designed to bring in as many external qualified minorities into temporary positions as possible, as quickly as possible. Of the 21 FTEs (22 positions) later authorized by Congress, nineteen have been filled. Two of the early selected candidates were non-citizens which set back the recruitment for those positions. There has been some difficulty in filling the last three positions, but the Director for Office of Wider Audience Development should come on board by the end of April; and the other two positions in Natural History and American History should be open for application again this month. The Institution hopes to complete Phase I of the Special Employment Initiatives program by May 1990.

Phase II--Step Up 90, an upward mobility program geared to internal staff, is just getting off the ground. The first five positions will be announced in early April and the last five position descriptions are in the process of development and should be announced no later than May 1. The positions chosen show a strong commitment by the Institution to open opportunities for on-board employees to train and advance into true professional careers either in museum fields or research.

Question 57: Briefly describe the Affirmative Culture Transition program. Is it to begin in FY 1991?

Answer: The Affirmative Cultural Transition (ACT) program, that the Smithsonian proposes to initiate in FY 1991, will be Phase III of the Institution's Special Employment Initiatives and is a more formal continuation of the initial "quick hire" effort. The program is specifically designed to address concerns expressed in the report of the Committee on Government Operations (House Report 101-391). Under this program, the Institution has specially targeted four Smithsonian bureaus which currently have no minority representation in their professional or senior level ranks. The requested funding (4 workyears and \$248,000) will be used to fill a specific position in each of the following organizations: the Smithsonian Astrophysical Observatory, the Hirshhorn Museum and Sculpture Garden, the Cooper-Hewitt Museum, and the Smithsonian Traveling Exhibition Service. The positions will be advertised as soon as the FY 1991 appropriation is received and will remain open until qualified minority candidates surface through the normal civil service competitive process.

In addition, ACT will serve as the long-term approach and commitment the Institution has to have to make changes in its professional ranks. The Secretary has given specific responsibility

to the Acting Assistant Secretary for Public Service to advise and coordinate activities related to cultural diversity. The Smithsonian has made this a stated area of emphasis in its Five-Year Prospectus.

Question 58: The Cooper-Hewitt National Museum of Design, the Hirshhorn Museum and Sculpture Garden, the Smithsonian Astrophysical Observatory, and the Smithsonian Institution Traveling Exhibition Service have been targeted for four minority candidate positions. Do you expect this to be a one-time effort? Do you intend to target other museums in the future?

Answer: The four bureaus mentioned were specifically targeted because of the total absence of minorities among their professional and senior ranks. These are the only four of the major bureaus where this condition exists. The Institution sees its request for funding and workyears to be a one-time base increase, but the effort to increase minority representation in these and all of its organizations is on-going.

Question 59: The Committee's report states that your established initiatives address increasing minority representation in junior level management and professional positions. However, before a real change can occur, the same ardor must be applied in the senior level management and administrative positions. What are your recruitment plans for the senior level management and administrative positions?

Answer: The Institution is exploring several options on how to get more minority representation at the senior management levels. With the recently established assistant secretary level responsibility for attention to these matters, we hope that a definite action plan will be forthcoming shortly. During the past year, the Institution has made two minority appointments at the assistant secretary level, and has just appointed a minority to a senior administrative position.

Question 60: An important point that the committee made was that without a diverse work force the accurate and ample portrayal of the art, life, culture, and history of minorities at the Institution will not be possible. What are you doing to bring minority researchers and minority curators into your organization?

Answer: The Institution is in complete agreement with the Committee's findings on this point. It is for this very reason that the Institution undertook the Special Employment Initiatives. Two problems in the past have been low turnover in research and curatorial positions, and a paucity of minorities trained in many of the traditional areas of Smithsonian focus. Recently, some organizations have made wider use of guest curatorships and contractual help to assure minority perspectives in various programs and exhibitions, but such efforts don't improve the work force profile. The Smithsonian has a longstanding fellowship and internship program designed to encourage and attract college students into research and museological careers. The Institution began the Career Awareness Program (CAP) eight years ago to develop

interest in these same careers among local high school students, most of whom are minorities. These are both long term efforts whose results cannot be easily translated into work force statistics as yet.

Question 61: The Committee on Government Operations also cited an example of Hispanic art which was misclassified due to the Smithsonian's lack of expertise in this area. What have you done to assure that you have individuals on your staff with expertise in the Hispanic art field?

Answer: Although the Smithsonian has fewer Latino/Hispanic professionals on the permanent curatorial/research staff than it wishes, the Institution is not without the input and influence of Latinos in our research and programming. For example, the Department of Anthropology, National Museum of Natural History, has had a long-time relationship with visiting scholars from Latin and South America. Researchers from Brazil, Chile, Argentina, etc., have come to the Smithsonian on Guggenheim and Fulbright Fellowships, short-term visitor grants, and under the auspices of Latin and South American governments. Visits range from a few days to a few years. In addition, collaborations often continue after the scholar returns home. Other museums obtain Latino/Hispanic expertise through contracted experts. On a more positive note, the Hirshhorn Museum and Sculpture Garden and the National Museum of American History have recently hired Hispanic professionals in research/curatorial positions for their collections and exhibitions programs. In anticipation of new or future curatorial vacancies, Smithsonian art museum directors have begun to seek qualified minorities, of all cultures, to broaden the research and programmatic perspective of their museums. Finally, through the Institution's Columbus Quincentenary Program and the proposed establishment of an "Institute of the Americas" after the Quincentenary, the Smithsonian is striving to generally reinforce its expertise in the intellectual, ecological and other issues that affect this hemisphere.

Research Salary Rates

Question 62: Under the purview of the Assistant Secretary for Research, the FY 1991 FTE costs for the various organizations range from \$23.9 thousand to \$54.4 thousand per FTE.

Why is there such a difference in FTE costs between Research organizations?

Answer: The difference in FTE costs between research organizations is attributed to the requirements of each individual organization. For example, the number of scholars pursuing careers in the biological sciences is greater than the number of scholars pursuing careers in astrophysics. Therefore, at the Smithsonian Astrophysical Observatory (SAO), in order to attract and keep first-rate scholars in the field of astrophysics, we are forced to offer the highest salary possible under the current Federal pay scale.

This has not been the case in the past for the biological sciences field. Also, the number of support personnel required, i.e. clerical, administrative, technical assistants, and custodial, varies between organizations and therefore attributes to the average costs per person.

Question 63: What is the average GS grade for the Astrophysical Observatory?

Answer: The average GS grade is 12.4. Of the 100 SAO employees on the General Schedule, 65 are scientists, 16 provide technical support (engineers, computer programmers, etc.), and 19 provide administrative support (librarians, program administrators, clerical workers, etc.). SAO's unusually lean staff (i.e. relatively few support personnel) accounts for the relatively high average GS grade.

Question 64: Why does the program increase for the Astrophysical Observatory for 2 FTEs require \$180,000 and the program increase for the Tropical Research Institute for 2 FTEs require \$106,000?

Answer: Even though both increases request 2 workyears for 2 new full-time permanent positions, the level of requested funding differs according to personnel costs required for each position and the amount of nonpersonnel support funding requested in each increase. For SAO, the 2 requested positions are for 2 atmospheric physicists (2 workyears and \$176,000) with a sum of \$4,000 requested for other support costs. For STRI, the 2 requested positions are for a scientist (1 workyear and \$79,000) and a technician (1 workyear and \$22,000), with a sum of \$5,000 requested for supplies and materials.

Question 65: The Environmental Research Center is requesting a program increase of 1 FTE and \$150,000. In addition to hiring an ecosystem modeler, funds could support the upgrading of the Center's computer system. What is the estimated salary cost? If you were to receive the \$150,000 could we expect to see a reduction in the FY 1992 budget request related to the one-time cost of upgrading the computer system? What would the reduction be?

Answer: The estimated salary and benefits cost for the ecosystem modeler position is \$50,000. For the support of the data management and modeling of the global change data, an additional \$30,000 would be necessary for supplies and services. In addition, the requested funding provides \$70,000 to begin to upgrade the Center's computer, now eight years old, during FY 1991. Recent staff growth and rapidly increasing demand for electronic data processing have already strained SERC's obsolete computer facilities, so an upgrade is necessary to meet the demands of new staff, new projects, and increased commitment to modeling arising from the Global Change Program. The upgrade would require funding for three years.

In FY 1991, SERC would replace the eight-year old central minicomputer with a new model providing more than four times the processing power and twice the disk storage of the present system.

In FY 1992, continuation of this level of funding will allow SERC to acquire relational data management software for the central minicomputer and for microcomputer work stations.

In FY 1993, SERC would use this funding to upgrade computer peripherals, providing up-to-date microcomputer work stations for research staff. SERC would also upgrade its local computer network to provide high-speed communication between all the scientific workstations and the central minicomputer.

For FY 1994 and following years, SERC may seek to retain at least a portion of this funding for the future costs of maintaining this computer system and further upgrading.

National Zoological Park

Question 66: The National Zoological Park is requesting a \$100,000 program change for FY 1991. One component of the request is for \$25,000 to purchase necessary laboratory supplies for the Genetic Resource Bank.

Would the \$25,000 item stay in the base in future years?

Answer: Yes, the request is for a base increase. In FY 1991 the funds will be used to purchase expendable laboratory supplies. In future years, the funds will continue to be used to purchase routine supplies for the lab.

Environmental Science Program

Question 67: On page 84 of the Smithsonian's budget justification, \$134,000 is proposed for 2 FTEs and for monitoring equipment and an upgraded computer system in the Environmental Science Program.

What kind of equipment and computer system upgrading is the Smithsonian proposing for the estimated \$58,000?

Answer: The requested amount will permit the Smithsonian to purchase one set of monitoring equipment for San Blas to measure tide level, wind speed and direction, rainfall, sea and air temperature, solar radiation, and salinity. A large proportion of the Institution's marine research is performed in San Blas, and it currently has no ability to measure any of these key physical phenomena. The availability of these data at Barro Colorado Island and the Galeta Laboratory have proven of enormous benefit to these scientific programs, as well as providing critical data of relevance to global change.

The computer system upgrade will be used to improve the management of data generated by current and planned monitoring in the Environmental Sciences Program. The Program's current system is close to capacity. The requested increase will allow the Program to purchase a computer with 4-6 megabytes of RAM, a hard disk of at least 300 megabytes for holding and processing data, a data storage and back-up system for the computer, and a laser printer for graphics production.

Question 68: How is it associated with the two requested positions?

Answer: With the planned expansion of its monitoring program and the increasing need for high quality physical data relating to global change, the International Environmental Science Program needs an environmental engineer at STRI to oversee the installation, running, and maintenance of monitoring equipment at Barro Colorado Island, Galeta, the San Blas monitoring installation requested for FY 1991, and planned future sites, such as the Pacific marine station at Naos Island, and the cloud forest station in Fortuna. The engineer will permit the Program to coordinate fully the physical monitoring programs at its different sites, thus permitting us to perform truly integrated studies across the Isthmus, which is an important region for understanding the relative importance of natural and anthropogenic phenomena in generating global change.

The new data manager will use the computer equipment to store and process monitoring data collected by the Environmental Sciences Program. The physical and biological monitoring data base contains approximately 30 years of combined information collected at the Galeta marine station and on Barro Colorado Island. An enhanced data management program will allow IESP scientists to analyze, interpret, and publish data expediently.

Major Scientific Instrumentation

Question 69: This is the third year that the Smithsonian has come to Congress with a funding request for the submillimeter telescope array. This year's request is for \$3.8 million.

What is the total cost for this project and when will it be completed?

Answer: The total cost, including personnel, for the Submillimeter Array is estimated to be \$32.4 million (1989 dollars), for a continental site. As indicated in the Institution's FY 1991 budget request to Congress (P.86), construction on a site in Hawaii is estimated to cost about 25 percent more. The exact total cost will depend on the rate of inflation as well as on the choice of site. The Institution expects the project to be completed in 1996.

Question 70: What would happen to this cost if this project were delayed for 1 year? What would be the programmatic impact of this study?

Answer: We estimate that the total monetary increase due to such a delay would be over \$2 million. The impact of a year's delay on the large, talented, and dedicated array staff could also be quite severe. The unique scientific contributions expected to be provided by the array could not be obtained in any other way and thus the research of the Astrophysical Observatory would be seriously reduced.

Question 71: Since you are asking for no-year funding to continue the development of the submillimeter telescope, are there some items that you are anticipated obligating at the end of the year?

Answer: No procurements are deliberately planned to occur at the end of a fiscal year; but the large and complex nature of the major contracts could easily cause this happenstance. For instance, a plan that calls for sending out a Request for Quote in March could, given even a relatively minor slip in schedule, lead to the letting of the contract being delayed to the start of the next fiscal year. Thus, it is important that we be able to conduct an orderly and economic procurement cycle, in which more than half a year's effort is not in danger of being lost because of, say, a few days' delay near the end of a fiscal year.

Question 72: Please submit for the record estimated obligation dates for the items you have listed on page 89 of your justification.

Answer: The estimated obligation dates for these main items are given below:

- Contract for the design and construction of the first two antennas (May 1991);
- Equip digital laboratory; develop intermediate frequency transmission system and phase lock distribution system (Oct 1990 - 50%, May 1991 - 50%);
- Develop computer architecture and select suitable system (ongoing throughout FY 1991);
- Start Site Development (July 1991);
- Start improvement of prototype 345 GHz receiver (Dec 1990); and
- Initiate Correlator Development (Jan 1991).

Question 73: On March 8, 1990, the Washington Post contained an article regarding the endangered Mount Graham red squirrel. As you know, Mount Graham has been chosen at the site for a new observatory complex that would include seven ground-based telescopes. The project reportedly would involve clearing 24 acres. However, some biologists contend that about 100 acres of prime red squirrel habitat would be affected. The article listed the Smithsonian Institution as a possible project participant.

Your budget justification indicates Mount Graham, Arizona, and Mauna Kea, Hawaii, are the two sites under consideration for your

submillimeter telescope array. Please tell us the status of your site selection study.

Answer: At present, we are continuing to gather and analyze a wealth of relevant atmospheric data for both sites and are building special equipment to measure the key characteristic of each site: the stability of the atmosphere, i.e., the correlation of the variations in the atmosphere's transmission of submillimeter waves, over horizontal distance of up to one kilometer. Along with these data, which should all be in hand and analyzed by early in 1991, we intend to consider for each site the environmental concerns, and the construction and operating costs for the array, in making our site selection.

Question 74: Are you preparing an environmental impact statement and, if so, when do you anticipate its completion?

Answer: No. It is premature to prepare an environmental impact statement. We must first complete our plan for the location of equipment for each site, have preliminary drawings made for each site, and then begin discussions of them with the host organization for each site. After completion of these discussions, we would address the issue of the environment impact statement. Funds are included in our project plan for this purpose.

Question 75: Are there similar issues or other concern with Mauna Kea site?

Answer: Mauna Kea, like Mount Graham, is an ecologically sensitive location that needs special care. We are greatly aided on Mauna Kea, however, in that the approved Complex Development Plan for the site anticipated the construction of several future telescopes. As a result, a preliminary investigation was completed of an area that appears, on first inspection, to be suitable for the submillimeter array. We will discuss these issues in more detail with the University of Hawaii when the preliminary site drawings, discussed above, are completed.

Question 76: When will you select a site?

Answer: Our project plan calls for selecting the site for the array no later than June 1991.

African-American Presence

Question 77: The Assistant Secretary for Museums has asked for \$100,000 in FY 1991 to cover travel and per diem costs of an advisory committee on the African-American initiative. In the FY 1990 appropriation Congress included \$155,000 for activities related to the African-American programs.

Last year's funding was to be used for a director and a program assistant. Have these positions been filled? If so, when? If not, when are these positions expected to be filled?

Answer: The Institution hired an Interim Program Director in January 1990. An advisory committee composed of internal and external museum professionals and scholars in African-American art and history will assist the Institution in developing criteria to evaluate candidates for the permanent Program Director position. This search process is expected to last until early calendar year 1991. The job description for a program assistant has been approved and submitted to the Institution's personnel office. It is expected that this position will be filled by the end of April 1990.

Question 78: What GS grades are these positions?

Answer: The Program Director will be a grade 16 and the program assistant will be a grade 9.

Question 79: How are the non-salary funds being used in FY 1990?

Answer: The non-salary funding will be used for research and travel costs for the Interim Director to attend conferences and visit African-American cultural and educational institutions, as well as the travel costs for the recently-appointed advisory committee, which is scheduled to meet twice in the spring, and twice in the fall.

Question 80: How will the membership of the advisory committee that is proposed in the FY 1991 budget justification be determined?

Answer: During April 1990, Secretary Adams formally appointed the individuals who will serve on this advisory committee. The advisory board is comprised of scholars, educators, business and cultural leaders from within and outside the Smithsonian. Members include historians, economists, art historians, museum directors, museum and science educators as well as lawyers and business leaders. Members were chosen because of the leadership roles they enjoy in their fields and/or because of their contributions to the field through their research or programmatic efforts.

Question 81: Will the members of this committee serve without pay?

Answer: Yes, advisory committee members will serve without pay.

Question 82: How does the Anacostia Museum fit into the African-American initiative?

Answer: The African-American initiative is engaged in exploring a mission, program and collecting policy for a national entity. The interim African-American program director is working with the staff of the Anacostia Museum to assure clarity of mission on the part of each and to discourage duplication of effort.

Air and Space Museum

Question 83: Secretary Adams, on January 30 you announced that the Smithsonian Board of Regents chose "to reaffirm its preference for Dulles as the site for the next extension for the Air and Space Museum." The proposed annex requires Congressional authorization and funding. The annex could house aviation artifacts such as the space shuttle Enterprise, a supersonic Concorde, and the SR71 Blackbird.

It is estimated that the location at Dulles would attract 2.7 million to 4.1 million visitors per year. Is that correct?

Answer: Yes, when the extension is fully implemented (Phase 3) it is estimated that the annex at Dulles will attract 2.7 million to 4.1 million visitors per year.

Question 84: Are these estimates based on visitors who are passing through the airport on scheduled flights or are they individuals who would be making deliberate trips to visit the annex?

Answer: These estimates are based on a study suggesting that number of visitors would make deliberate trips to visit the annex.

Question 85: How many of these deliberate trips are projected to be made by residents of the Dulles area (20 mile radius)?

Answer: The estimate made was for a 25 mile radius; it is estimated that approximately 340,000 - 430,000 visits per year would be made by people living within a 25 mile radius of the NASM extension.

Question 86: The Washington Post stated "Smithsonian and Virginia officials involved in promoting the Dulles selection said they expect a rail link to Dulles to be in place by the time the Air and Space annex is complete." What assurances do you have that public transportation could be in place?

Answer: At the Institution's last meeting with representatives from the Commonwealth of Virginia, they stated that there is a long range plan for rail service to Dulles, to be in place by the time the three-phased construction of the Air and Space Extension is complete. The State also plans to provide a bus link with the nearest existing Metrorail station, to be operative by the time the Phase I facility opens to the public.

Question 87: What are your projections for visits to the Air and Space Annex with, and without, a rail link to the city?

Answer: Current projections for visitation to the Air and Space Extension at Dulles (at the completion of Phase III) are estimated to be 3.3 to 4.1 million visits with a rail link; and 2.7 to 3.3 million visits without a rail link.

Question 88: Would you explain what cost-share arrangements are proposed with the State of Virginia?

Answer: The state's contribution of the infrastructure has been valued at approximately one-fourth of the total construction cost of phase I. Cost sharing arrangements for the construction of all three phases is still under consideration by the state. One potential model for this cost sharing arrangement is the fund matching agreement approved for the construction of the National Museum of the American Indian (i.e.: 1:2 match). The Institution expects to receive a formal proposal from the State of Virginia in April.

National Museum of Natural History/Museum of Man

Question 89: The Smithsonian is proposing 2 workyears and \$100,000 for establishing an Associate Director for Public Programs at the National Museum of Natural History/Museum of Man. Your budget justification (page 105) states "the goal of coordinating the efforts of the offices of education and exhibits under one associate director is to create a national model for public education in the natural sciences and anthropology that will build on the strengths of the Museum's collections and research interests and the size and diversity of the Museum's audience."

Why wouldn't the public education function fall under the Assistant Secretary for Public Service?

Answer: The activities of the National Museum of Natural History/Museum of Man's Office of Education are, for the most part, exhibit-oriented and exclusively focused on sciences within the specialized museum. The Education staff enhances the interpretation of exhibits in the National Museum of Natural History through related in-house and outreach events and programs. This includes instructional tours of and curriculum development about the permanent and temporary exhibits, the Friday Film and Lecture Series, the Naturalist Center and Discovery Room. Thirty-five thousand school children came to the Museum of Natural History for special programs in 1989, while outreach programs taken to local schools reached another 16,000 students. A new Native American project organized by the Office of Education is exploring new ways to involve native peoples with the presentation of their own cultures. With the need to increase scientific literacy, the use of exhibits to educate the public better about science and about the impact of humans on the environment makes the link between the exhibit function and the education function a necessarily strong one.

The central Smithsonian service units, including the educational offices that report to the Assistant Secretary for Public Service, are designed to supplement these museum-specific needs. They serve an important coordinating function between museums within the Smithsonian, and between the Smithsonian and cultural and educational institutions in the larger external community.

Question 90: What interaction would the proposed Associate Director for Public Programs have with the Office of Exhibits Central?

Answer: The Museum's Office of Exhibits is a client of the Office of Exhibits Central (OEC). OEC provides support in areas where the Museum lacks the expertise, such as modelmaking and complex plexiglass work. When the Museum produces an exhibit, its Office of Exhibits must determine the best utilization of the resources available. Many projects can be done in-house, some jobs are best done by OEC, and some must be contracted out. Large exhibits often require a combination of all these options. OEC is basically a service organization for the many Smithsonian museums--particularly those without their own exhibition capabilities, such as Smithsonian Institution Traveling Exhibition Service.

Question 91: Do other museums have Associate Directors for Public Programs. If so, which museums?

Answer: Within the Smithsonian, we have two museums that have Assistant Directors who supervise both exhibitions and education: The National Portrait Gallery's Assistant Director for History and Public Programs, and the Freer/Sackler Galleries' Assistant Director for Exhibitions and Facilities. Two more Smithsonian organizations have this position under consideration or plan to establish one (the National Zoological Park and the Cooper-Hewitt Museum). The National Museum of American History has an Assistant Director for Public Programs which includes education, but not exhibition production.

In the natural history museum field, there are two major organizations with such a newly-created position: the Field Museum of Chicago and the American Museum of Natural History in New York City.

Floating Laboratory

Question 92: The Institution is proposing to construct a research vessel for mobile research on marine systems. It would replace the present research vessel, Benjamin.

The Statement of Managers which accompanies the Conference Report on H.R. 2788, the FY 1990 Interior and Related Agencies Appropriations Bill, requested the Smithsonian to look for ways to bring the total cost down under the current estimates for the vessel. A report was expected prior to the FY 1991 hearings. Yesterday a letter, in lieu of the report, arrived which was intended to bring us up to date on the floating laboratory project.

Why hasn't such a report been submitted to the Subcommittee?

Answer: STRI received funds for a design study for the floating laboratory in the FY 1990 budget. STRI solicited bids for the study in November 1989. The firm chosen was Rodney Lay and

Associates. A deadline was set at March 15, 1990 for the design package. This was the earliest deadline STRI was able to obtain.

The U.S. military action in Panama in December and January disrupted communications and travel, and the emergency situation resulting from the taking of Smithsonian hostages and the looting in the city temporarily disrupted normal STRI operations.

Fortunately, STRI suffered no casualties or damage to its facilities as a result of these events. However, normal operations of the Institute were disrupted for several weeks. Representatives of Rodney Lay were unable to travel to Panama at the scheduled time, and review of preliminary documents by STRI staff was delayed.

Lay was finally able to visit STRI on March 5 and has now completed the study. STRI received it in early April and has delivered copies to the Subcommittee. The study includes an analysis of cost-reduction options. The letter to which the Subcommittee has referred contained a summary of information available at the time.

Question 93: What are the results of your cost-reduction studies to date?

Answer: STRI has explored alternatives to the construction of a new research vessel and options for reducing the estimated cost of a newly constructed vessel.

Alternatives to construction:

We looked at several possibilities and found none acceptable.

We searched for an appropriate used research vessel and found none available. These vessels are specialized and often come on the market only towards the end of their useful life, if at all.

Yachts of the size we require lack open deck space and room for the machinery, equipment and storage needed for marine research. Based on our experience with conversions of four smaller yachts, we have concluded that refitting a larger pleasure craft would yield only a larger "floating hotel" inadequate to support our current and growing program of marine research.

In January, 1988, STRI initiated a search for an appropriate vessel from Federally seized properties. No suitable vessel has been found. Seized vessels tend to be either small, high-speed pleasure craft or commercial vessels too large to enter or maneuver in shallow coastal waters over coral reefs and too expensive to operate and maintain.

In brief, it is STRI's understanding that existing hulls of the size required are designed to carry persons and light cargo loads at high speeds. The design and performance characteristics of these hulls make them unsuitable as research vessels. Further, STRI interviewed persons at U.S. universities and research institutions who are responsible for the operation and administration of the few research vessels that have been constructed on such existing hulls.

All concur that their vessels lack the stability and performance characteristics that we require. Finally, expected cost savings from using an existing aluminum hull design would be no more than \$60,000.

Construction costs:

STRI has asked that Rodney Lay obtain estimates of construction costs for the vessel according to the design features we requested, and also to explore ways to reduce the cost of the vessel below the estimates. The construction cost estimate is \$2,035,000, based on pre-bid quotes. However, we expect that we could reduce the construction cost to \$1,800,000 without significantly compromising the operating characteristics of the vessel.

As the letter to the Subcommittee stated, the largest reduction in construction costs would come from using steel rather than aluminum in the hull construction, but the consequent increase in operational and maintenance costs would not make this approach cost-effective overall.

Reducing the size of the vessel is also not a viable alternative. Reducing the size sufficiently to result in cost reduction could not be done without significantly compromising design characteristics for sleeping quarters and workspace.

The Smithsonian will seek additional funding from other sources for the difference between the projected cost of the project and the funding requested from the Congress. Two alternatives that will be explored are private fund-raising and a request for reprogramming within the same authorization. The U.S. Navy is planning additional activities in the Galeta area that may reduce the need for STRI to supply infrastructure support when its builds the new Galeta laboratory.

Other potential construction savings were examined but also found not to be cost-effective.

Question 94: Is the \$1,550,000 requested in this budget lower than the previous estimates?

Answer: The FY 1991 request for the floating laboratory is based on the preliminary estimate of \$1.7 million for design and construction costs. As part of the FY 1990 appropriation, Congress provided \$150,000 for the design costs of the vessel. For FY 1991, the Institution is requesting the balance of the funding required to reach the \$1.7 million total (\$1,550,000).

Question 95: What modifications were made to the original estimates to arrive at the \$1,550,000?

Answer: The FY 1991 request does not reflect any modifications to the preliminary estimate of \$1.7 million. As explained in the previous question, the request for FY 1991 is the original estimate minus the amount appropriated for design. It therefore reflects the same estimate as the previous request, since design costs were built into the original estimate. The planning study will provide more

detailed information on which to base a new cost estimate to replace the preliminary estimate of \$1.7 million.

Columbus Quincentenary Programs

Question 96: Mr. Adams, the Smithsonian Institution is requesting \$1.5 million for the Columbus Quincentenary Programs. In FY 1990 you received \$1.2 million.

What have you been doing with the money that we have given you in the past for Columbus Quincentenary Programs? For the record, please submit a list of projects that you have completed to date.

Answer: The Institution is planning and developing a wide range of programs and activities to commemorate the arrival of Christopher Columbus in 1492 during the period 1987 through 1993. Listed below are the programs and projects presented or completed so far.

QUINCENTENARY PROGRAMS COMPLETED

EXHIBITIONS:

National Museum of American History:

A Chinese Puzzle in California: Foreign Trade and Native Americans Before 1600, September 1987
Commerce and Conflict: The English in Virginia, 1625, April 1988
Kiva, Cross, and Crown at Pecos Pueblo, April 1989

SYMPOSIA:

Office of Folklife Programs:

Seeds of the Past, September 1988
Seeds of Commerce, March 1989

Office of Quincentenary Programs:

Americans Before Columbus: Ice Age Origins, September 1987
Musical Repercussions of 1492, March 1988
Violence & Resistance in the Americas: the Legacy of Conquest, May 1989

National Museum of American History:

After Columbus: Encounters in North America (series)
Highlighted archaeological and ethnohistory research focusing on Spanish, French, English, and Dutch contact with American Indians, September 1987, Explored American Indian perspectives on European Colonization, April 1988
Examined interactions between Spaniards and the Indians in the Spanish borderlands during the sixteenth to eighteenth centuries, April 1989

National Museum of Natural History:
Latin American Archaeology, 1988
Disease and Demographics, November 1989

PUBLICATIONS:

Smithsonian Institution Press:
Artifacts of the Spanish Colonies, by Kathleen Deagen,
1987
Monte Verde, by Tom Dillehay, 1989
Tropical Renaissance, by Katherine Manthorne, 1989
Columbian Consequences, Vol. I, edited by David Hurst
Thomas, 1989

OTHER ACTIVITIES:

Office of Folklife Programs:
Festival of American Folklife Program, The Caribbean:
Cultural Encounters in the New World, June 1989

Office of Quincentenary Programs:
Newsletter, "The New World," March 1990

Smithsonian Resident Associate Program:
Performances, readings, film screenings, seminars and
workshops

Smithsonian National Associate Program:
Workshops in Chile, ongoing

Question 97: How many FTEs are you requesting to go with the \$1.5 million?

Answer: As part of the total funding of \$1.5 million for Quincentenary Programs requested in the FY 1991 budget, funding is included for 14 full-time positions and 1 part-time position, resulting in a total of 14.5 workyears.

Question 98: Is the \$1.2 million, which was appropriated last year, part of the FY 1990 base? What about funding from prior years?

Answer: The FY 1990 base of \$1.2 million for Quincentenary Programs represents the cumulative total of program increases approved in the FY 1987 through FY 1990 budgets.

Question 99: What has happened to the individuals from preceding years upon completion of other phases of the Columbus Quincentenary Programs? Were their assignments multi-year projects?

Answer: The positions approved for Quincentenary programs during FY 1988 through FY 1990 continue to be needed to research, develop, and implement the specific programs for which they were hired. Their assignments are multi-year in nature, continuing through the duration of the Quincentenary period.

Question 100: Does the Smithsonian move people from project to project when an initiative is completed and a new initiative approved and funded? Can you give us some examples?

Answer: From time to time, as needed to respond to programmatic changes, Smithsonian bureaus may reassign staff from project to project, or may add additional new projects to the ongoing responsibilities of current staff. One current example is that of the Quincentenary itself. In addition to the positions provided specifically for the Quincentenary, other current staff in several Smithsonian bureaus will also be involved in Quincentenary projects. At the Museum of Natural History, for instance, exhibition staff who produced the "Magnificent Voyagers" exhibition are currently working on Quincentenary programs. At the Air and Space Museum, the curator for the "Looking at Earth" exhibit is currently assisting in the development of the Satellite Atlas of the World. At the Office of Folklife Programs, program development for its series of "living exhibitions" on the National Mall, symposia, scholarly programs, and publications has so far been provided by existing staff. In fact, the FY 1991 budget request for the Office of Folklife Programs seeks funding to hire a program coordinator to take over the responsibilities of program development from existing staff as the demands for this assignment expand to a full-time requirement. In this case, as in other positions requested for special programs such as the Quincentenary, staffing requested specifically for these programs represents the personnel required to undertake these programs above the level of current staff participation.

Question 101: Can we expect to see a decrease in your FY 1993 budget request at the conclusion of this initiative?

Answer: Based on the preliminary budget estimates for future years included in the Institution's Five-Year Prospectus, FY 1991-FY 1995, the Institution intends to request a final increment in the level of funding for Quincentenary Programs in FY 1992, followed by a decrease in the level of funding for Quincentenary Programs in FY 1993. Some Quincentenary Programs, however, such as at the National Portrait Gallery, are expected to extend beyond FY 1992. Moreover, as described in the FY 1991 budget request (page 238-239), the Institution plans to request the retention of part of the Quincentenary funding to establish a permanent Hispanic-American program for the "Institute of the Americas" after the Quincentenary:

"As another long-term initiative developing out of the Quincentenary, the Smithsonian is looking into the possibility of establishing an entity with the provisional title of "Institute of the Americas," which should facilitate a scholarly exchange concerning intellectual, cultural, ecological and other issues that affect this hemisphere. This issue-oriented approach can help to solve such problems as the exploitation of our natural and cultural resources. Non-Smithsonian scholars and policy makers will come to the Institution to pursue research in these fields and to share their ideas and perspectives with Smithsonian staff..."

Museum Support Center

Question 102: The Smithsonian Institution has a Museum Support Center located in Suitland, Maryland. The Center provides state-of-the-art facilities for the conservation and preservation of museum objects, conservation training, and the storage of museum collections. The storage wing consist of four storage pods, each approximately the size of a football field and 28 feet high.

How many storage pods are currently being fully utilized?

Answer: Because of the problems earlier encountered in the purchase and installation of collections storage equipment, none of the four storage pods at the Museum Support Center is currently fully utilized. In Pod 3, reserved for "wet" collections storage equipment for specimens preserved in alcohol, approximately 25 percent of the space is presently occupied. In Pod 3 and the other three pods, where construction of the concrete decking has recently been completed, full utilization will depend upon the funding requested in FY 1991 and following years for the purchase of collections storage cabinets and the "high-bay" storage system for very large objects. Based upon current funding availability, completion of the purchase of collections storage equipment and the relocation of collections to the Museum Support Center will not be possible until after the year 2000.

Question 103: What will it take to make the storage center fully operational?

Answer: It is projected to take between \$24.1 million and \$31.4 million to complete the purchase and installation of the collections storage equipment at the Museum Support Center. It will take approximately \$5 million to complete the "Initial Move" of collections to the MSC. The Institution's preliminary estimate of funding requirements for the "Growth Move" is currently projected to be approximately \$2 million (excluding escalation), based on the Smithsonian experience with the "Initial Move." For Museum Support Center Operations, annual administrative and facilities maintenance support for the MSC at full operations will require an annual base of approximately 50 workyears and \$1.5 million. (All amounts reflect 1989 dollars.)

Question 104: Do you have adequate storage facilities for your collections?

Answer: The Smithsonian does not have adequate storage facilities for all of its collections. Most of the Institution's storage facilities are overcrowded, dirty, asbestos insulated and/or poorly controlled with regard to temperature and humidity conditions. Improvements of these conditions have been made in some locations, such as in the Museum of American History building, through the use of Major Capital Renewal and Modifications and Alterations funds. Plans are in process to make improvements in other locations, such as in the Museum of Natural History building. In spite of such improvements, however, the Institution also has a severe need for additional space for storage of its collections.

Designed in 1979 to address the highest priorities of the Institution's collections storage space needs at the time, primarily that of additional space for the collections of the Museum of Natural History, the Museum Support Center's full potential as a state-of-the-art facility has been greatly hindered by the problems encountered in the equipping of the storage pods. Although great progress has been made in FY 1989 and FY 1990 to resolve these problems, the MSC alone will not solve the Institution's storage space needs, even when it reaches full utilization.

The Institution has been gathering and analyzing data on the collections storage needs of the collecting bureaus and offices of the Smithsonian, including the Air and Space Museum, the Museum of American History, the Museum of Natural History, the art museums, the Smithsonian Institution Libraries, and the Smithsonian Institution Archives. The Institution is currently projecting space needs for these collections for the immediate future, the next twenty years, and the next fifty years.

Question 105: Where are your new collections stored when they are received?

Answer: When new objects added to the Smithsonian collections are received, they may be stored in a variety of storage locations. A few collection storage areas still have a small amount of room available to store newly-acquired objects. Most other new acquisitions are stored in areas that were not originally designed for collections storage and most often are without appropriate environmental controls. These areas include such areas as hallways, attics, basements, offices, closed-down exhibit galleries, and rental space. The other storage alternative for newly-acquired objects is to overcrowd current storage areas -- for example, to place additional objects into an already-filled storage drawer. This approach to storage of new objects often causes damage to both the new and the existing objects because of the resulting severe compression.

Question 106: I understand that your request to OMB for the Museum Support Center was \$11 million and it was cut back to \$4.3 million. Is that correct?

Answer: That is correct. The Office of Management and Budget did not allow any of the requested increases for FY 1991. The Institution's budget request to OMB would have provided a total annual level of \$8 million for the purchase of MSC collections storage equipment; a total annual level of \$1.9 million for MSC Move activities, including the Asbestos Evaluation project; and a base of \$1.3 million for MSC Operations.

With no programmatic increases allowed, the FY 1991 budget request to Congress includes a total annual level of \$2.8 million for MSC collections storage equipment; \$0.4 million for MSC Move activities, including the Asbestos Evaluation project; and a base of \$1.1 million for MSC Operations.

Question 107: What would you do with the additional \$6.7 million that was in your budget request to OMB?

Answer: If the Institution were to receive the additional \$6.7 million in funding for MSC, \$4.942 million would be used to procure needed collections storage equipment; \$1.504 million to expand MSC Move activity that is possible because of the number of storage cabinets that were installed in FY 1989 and are being installed in FY 1990; and \$0.26 million for expanded computer support for MSC Operations.

Question 108: Storage is intrinsic to museum operations. Would this be a high priority area for you if Congress were going to add funds to your budget?

Answer: The procurement and installation of all of the MSC collections storage equipment and the relocation of collections to the MSC is a very high priority for the Institution. The full utilization is vital to the Institution's future ability to protect its collections. Not only is it critical to relocate the collections to the MSC to prevent further deterioration of them, resulting from overcrowding and poor environmental conditions in their present storage locations, but their removal is also critical to permit other Institution projects to proceed. The relocation of collections to the MSC from many Museum of Natural History building storage areas is critical for the timely and efficient progress of the Museum's Major Capital Renewal Plan to replace its mechanical equipment and remove/encapsulate asbestos insulation. Any delay in the move of collections to the MSC will have a domino effect on, and will delay, the Museum of Natural History's Major Capital Renewal Plan.

New Accounting System

Question 109: Last year the Congress provided \$434,000 and 11 FTEs to the Office of Accounting and Financial Services for the Smithsonian's new accounting system. This year's justification requests 13 FTE's and \$505,000 for the Office of the Treasurer. Page 251 of your justification states "the requested funding would support the implementation of a new Financial Accounting System that will produce more timely and accurate financial information."

Is this the same system that we funded last year?

Answer: Yes, this is the same system that we requested funding for last year. The Smithsonian's current accounting system is 13 years old with some elements even older. Software packages for major elements of the new accounting system were purchased last year with Federal funds. The new software was used first during FY 1990 in the development of a new Personnel Cost Projection System. This system translates Smithsonian payroll data generated by the Department of Agriculture's National Finance Center into usable form for account reconciliation and budgeting. An enormous amount of work has also been completed with respect to documentation of the old accounting system (necessary for conversion), establishing

requirements for the new system, testing the new software and establishing policies and procedures. Shortly, with the aid of outside consultants we will begin implementation of the general ledger package. Parallel testing will occur in late FY 1990 and during FY 1991, followed by implementation of funds control, accounts payable, and purchase order modules.

Question 110: Half of the FTEs requested for last year were to be temporary accounting technicians who were to take you through the "temporary workload increase." Why doesn't your justification reflect a decrease, rather than an increase?

Answer: Last year 7 temporary positions were requested. As a result of Congressional action, 4 of the temporary positions were eliminated. In addition, one-quarter year funding was cut from both the permanent and remaining 3 temporary positions. Gramm-Rudman cuts further cut into the increases. As a result of the above as well as the current implementation schedule, it will be necessary to maintain the three temporary positions at least through FY 1991. Our intention to do so should have been indicated in our justification.

Please note that the other 8 positions in FY 1990 were permanent. These positions are required not only to assist in the implementation stage but also to maintain the new more complex system once implemented. The new positions in FY 1990 and those required in FY 1991 reflect the fact that the new system will offer a needed level of internal controls, financial data and service to the bureaus not currently being provided.

Question 111: It would seem that a new, automated accounting system could be operated with fewer employees than needed for the current system and would be more efficient. Again, why is an increase requested again this year?

Answer: A new accounting system is necessary because the old system can no longer meet the demands given the volume of data currently being processed. In addition, changing external and internal requirements must be provided for. The new system will be more efficient than the old but it will also provide more controls, data and service than the old. The old system was implemented in 1977 to accommodate Federal Salary and Expense appropriations of \$87 million with some modest expansion. As of 1990, our Federal appropriation is \$225 million with much more detailing and subaccounting required.

A similar increase in volume and complexity has occurred in the Smithsonian's Trust fund budget. Comparable increases in staffing and support are being provided by Trust funds for the new accounting system.

It is likely that for certain processes the cost will go down. For example, many reports will be computer generated rather than manually prepared. As a result of interactivity of systems, data will not have to be entered more than once. This will all save money, but the savings will be offset in meeting expanded

requirements, e.g. those set forth by the Federal Joint Financial Management Improvement Program (JFMIP).

We must provide for current and long term needs with respect to solid internal controls, improved management information and the sheer volume of financial activity not currently handled by the existing system.

Question 112: How many of the 13 FTE's that are requested this year would be permanent employees?

Answer: All of the 13 FTE's are permanent positions. While they support the implementation of the new accounting system, they meet permanent, long-term needs and are not specific to a short-term implementation effort.

Question 113: If these are short-term activities, why are permanent employees being hired?

Answer: As explained above, they are not short-term activities.

Question 114: When can we expect to see a savings from this new system?

Answer: It is unlikely that there will be direct reductions to levels of funding for accounting services. A given process may cost less per transaction, but increased numbers of transactions will most likely not permit reductions without loss in service. Many of the anticipated savings and efficiencies will be manifested in other parts of our budget. Improved controls may cut losses for many of our activities. More timely financial data will lead to more efficient utilization of resources for all programs.

Office of Personnel Administration

Question 115: Nine additional work years and \$426,000 are proposed for personnel administration activities. How many people do you currently have?

Answer: The Office of Personnel Administration has 55 civil service employees and 26 trust employees for a total of 81 persons.

Question 116: What will these additional people do and why are they necessary?

Answer: Five of the requested new staff would provide core support for the management and operation of the Delegated Examining Unit under authority given to us by the Office of Personnel Management (OPM). In effect, this authority allows the Institution to serve as OPM's agent to examine for positions of special relevance to the Smithsonian, such as curatorial and exhibitions staff, museum scholars, scientists, guards and other occupations.

Exercise of this authority will greatly enhance our ability to fill positions quickly and simultaneously target sources of minority applicants heretofore missed by OPM registers. The other four positions are meant to strengthen day-to-day personnel operations and provide the broad range of human resource services demanded by the Institution's managers and employees. Further, in order to cope with changing workforce demographics, the Smithsonian's personnel system must develop better strategies for attracting, hiring, training, motivating and keeping talented people.

Question 117: How was their need determined?

Answer: The need for five persons for the Delegated Examining unit is based on OPM standards governing the authority. Three personnel staffing specialists are needed to rate, rank and refer applications for almost 20 occupational groups. One personnel assistant is required to ensure the cases are properly documented, statistics are maintained and reports are produced for OPM review. One clerical position is needed for filing and typing support. Finally, one of the three personnel staffing specialists will also serve as the supervisor of the unit, overseeing staffing activities and ensuring quality work performance.

The need for the other four positions is based on assessments both by Office of Personnel Administration management and by their customers that the Office is inadequately staffed either to meet daily requirements or to assume the proactive role expected by its many clients. In its May 1989 report to the Institution, the National Academy of Public Administration stated "In reviewing the operations of OPersA, NAPA was acutely aware of the difficulty of providing personnel services to an organization that is highly decentralized, has a broad and general mission (and) has more than 200 job categories -- ranging from the scholarly to the business world." NAPA went on to cite the high ratio of employees to be served to the number of personnel staff as reported in the FY 1991 budget justification on page 254. The addition of 2 personnel management specialists and 2 personnel assistants will help to reduce that high ratio.

Payroll Base Deficiencies

Question 118: Your have identified a \$344,000 adjustment to the base called "payroll base deficiencies." The justification for this adjustment states that some of the smaller offices have experienced a gradual erosion of base funding as a result of low turnover, staff promotions, pay increases, and/or the occasional need to fill vacancies at higher grades to attract the best available candidates. On page 30 of your budget justification, you have identified 4 organizational units out of 35 as having deficiency problems.

How many FTEs are in each of the four organizations?

Answer: For FY 1991, the Smithsonian has requested additional funding to address payroll base deficiencies of nine organizational

units (incorporated in 4 different line-items). The following chart provides the number of workyears for each:

	<u>FTE</u>
Assistant Secretary for Museums	3
--Office of the Registrar	
Assistant Secretary for Public Service	6
--Immediate Office	5
--Telecommunications	13
--Public Affairs	
Smithsonian Institution Press	29
Administration	
--Office of the Inspector General	14
--Office of the Treasurer	2
--Financial Management and Planning	5
--Office of Equal Opportunity	8

Question 119: Provide the Subcommittee with an explanation of why there is not flexibility to make adjustments for each of the four areas.

Answer: Each of these budgets has very limited or no other object class funds to absorb the payroll base deficiency. In fact, the situation of these bureaus deteriorated during FY 1990, as what little other objects funding they had was reduced to absorb the FY 1990 Gramm-Rudman-Hollings reduction. Two of these nine bureaus (the Office of Telecommunications and the Office of Financial Management and Planning) currently have no Federal other objects funds at all. In three other bureaus (the Office of the Registrar, the Office of the Inspector General, and the Office of Equal Opportunity), the requirement to absorb their payroll base deficiencies would totally eliminate their limited other objects funds in FY 1991, while two other bureaus (the immediate Office of the Assistant Secretary for Public Service and the Office of the Treasurer) would be left with less than \$10,000 in Federal non-personnel funds. For the remaining two bureaus (the Office of Public Affairs and the Smithsonian Institution Press), the absorption of unfunded payroll costs would reduce the funding available for non-personnel costs by approximately 50 percent.

Special Salary Rates for Security Guards

Question 120: At last year's hearing we discussed the Smithsonian's request to the Office of Personnel Management for special salary rates for security guards. It is our understanding that you received approval for new salary rates last May.

You told us last year that the turnover rate for 1987 was 30% and for 1988 it was 23%. Have the new rates helped with guard turnover frequency? What is the present turnover rate?

Answer: Yes, we believe that the special salary rate has helped to reduce guard turnover frequency. The overall turnover rate for FY 1989 was 22%. The special rate for guards in the Washington, D.C. area was approved effective March 12, 1989, about half-way into FY 1989. Perhaps a more telling statistic is the comparison of the proportions of guard resignations in which the stated reason for leaving the position was the low salary level. In FY 1989, 40% of guard resignations were due to low salary. In FY 1988 and FY 1987 the figures were 43% and 57%, respectively.

Question 121: Are there other means of recruiting and retaining security guards?

Answer: The Smithsonian uses conventional recruitment methods for guards, e.g., vacancy announcements and occasional paid-advertising. The Office of Personnel Management has delegated examining authority for guards to the Smithsonian, thus streamlining the process somewhat. However, competition for security guard positions is restricted by law to persons entitled to veterans' preference as long as such applicants are available for appointment. The Office of Protection Services has vigorously recruited retired and soon-to-be-discharged military personnel at local job fairs. We have identified ourselves as a viable employer to local college and university placement officers offering part-time employment opportunities for college students. We have also considered the use of docents and volunteers for providing security in the galleries.

Emergency Repairs of Buildings

Question 122: Your justification (page 285) requests \$200,000 for emergency repairs throughout the Smithsonian Institution. What was the level of emergency repairs in FY 1989? Please provide a list of the FY 1989 repairs, including a description of each project, for the record.

Answer: In FY 1989, the Institution spent \$92,800 of the \$100,000 appropriated for emergency repairs. The remaining amount was carried over for use on emergency repair projects during the current fiscal year.

FY 1989 funds appropriated for emergency repairs were spent on the following projects:

- \$24,000 to rent and erect scaffolding needed to repair fallen plaster in the Rotunda of the Museum of Natural History
- \$11,600 to repair fallen plaster on the walls and ceiling in the Great Hall, Commons and Lounge areas of the Smithsonian Institution (Castle) building
- \$34,000 to correct hazardous air exhaust conditions at the American Art/Portrait Gallery building
- \$2,100 for replacement of irreparably corroded chill water

coils serving library and collection storage areas in the Museum of American History

- \$21,000 for repairs to public elevators at the American History building

The Smithsonian uses funding from the emergency repairs category only as a last resort. The Smithsonian often funds a number of emergency repair requirements by redirecting small residual balances in the R&R account remaining after completion of other repair projects. Some work related to repairs of an emergency nature is also done as part of R&R projects in other categories. The Office of Plant Services also uses Salaries and Expenses funds, if available, to make many of the less costly emergency repairs that it identifies in the course of routine inspection. Since much of this work is done as part of other projects, there is not a complete listing of emergency repair work funded by other sources.

It is important that the Institution retain an adequate level of funds available in the R&R account specifically earmarked for emergency repairs, to avoid the risk of not being able to replace a piece of failed equipment or make a critical safety correction without deferring other much needed work.

Question 123: How much have you spent for emergency repairs in FY 1990 to date?

Answer: Through the end of March 1990, \$41,000 has been spent in FY 1990 from the emergency repair category. Projects included repair of a damaged vacuum condensate unit and pumps at the American History building, replacement of worn out air handler coils at the Freer Gallery building, and electrical repairs at the Smithsonian Institution building. The Office of Design and Construction expects to obligate an additional \$155,000 for emergency work in the next several months.

Heating, Ventilating, and Air Conditioning Systems

Question 124: Explain what projects would be included in the \$200,000 for the HVAC Controls Upgrade under Miscellaneous Locations (page 285).

Answer: The major HVAC Controls Upgrade Program began during FY 1986, and involves the conversion of the Institution's energy management and facilities monitoring systems from the two old and antiquated IBM System 7 computers to a single high capacity DEC computer which was installed to control systems in the Quadrangle. This conversion reduces the time spent by the Institution's Office of Plant Services (OPlantS) staff in touring through the buildings to check the equipment and improves control environmental conditions in the facilities. The software being used for the conversion features direct digital control, which allows OPlantS staff to correct a number of malfunctions and reset alarms from a computer

console in a central location rather than visiting the site to make the adjustment.

Through FY 1989, the Office of Plant Services staff completed conversions of the existing systems at the Hirshhorn, Arts and Industries, Smithsonian, Quadrangle, Renwick, Service Center (at 1111 No. Capitol Street), and Greenhouse buildings. Additionally, the new restaurant and the main lighting system at the Air and Space Building were added to the new system. OPlantS is converting the American History Building in conjunction with the phased major capital renewal project. OPlantS staff has also converted the energy management and part of the facilities management system for the Natural History Building. During FY 1990, the staff will convert the Freer Gallery systems and the systems at the American Art and Portrait Gallery Building.

OPlantS will use the FY 1991 funds to complete the total conversion of these systems at the Air and Space Building and to continue the conversion of numerous critical facility monitoring alarms at the Natural History Building. The Institution will use the requested funds to purchase the necessary equipment and software, and Office of Plant Services staff will perform the installation. The Institution expects to request funding in FY 1992 and 1993 to complete the conversion of facilities systems to direct digital control.

Asbestos Removal

Question 125: How is the Smithsonian's program of asbestos removal proceeding?

Answer: The Smithsonian has implemented an effective policy for the protection of staff, volunteers, collections and the visiting public from asbestos exposure. The policy is based on current Occupational Safety and Health Administration (OSHA) regulations and Environmental Protection Agency (EPA) guidelines governing asbestos. The policy supplements a rational and systematic plan for the management of asbestos-containing materials in all Smithsonian facilities. This plan includes provisions for the identification of damaged and friable asbestos-containing materials, worker training, medical surveillance, the use of personal protective equipment, and work practice controls.

Since FY 1981, the Congress has provided a total of \$5.0 million for asbestos abatement at the Smithsonian. The Institution has conducted asbestos removal or encapsulation projects at a number of facilities, including the American History, Natural History, American Art and Portrait Gallery, Arts and Industries, Smithsonian Institution (Castle), Freer Gallery, and Renwick Gallery buildings and the Cooper-Hewitt Carnegie Mansion.

In FY 1989 the Smithsonian contracted for a complete Institution-wide assessment of asbestos abatement needs. The contractor has already completed surveys in Natural History and American History buildings and will complete surveys of five more

facilities by the end of calendar year 1990. The survey of the entire Institution will be complete by the end of FY 1991. The contractor will identify asbestos locations, assess and prioritize needs for abatement activities, and develop a schedule for removal or containment and an estimate of the annual cost. This information will form the basis of future budget requests.

For FY 1990, \$500,000 was appropriated for asbestos work and expenditures to date amount to nearly \$490,000. The balance will be used for additional work before the end of the fiscal year.

Question 126: When do you anticipate completing the program?

Answer: Current asbestos abatement efforts fall into two categories. The Priority Abatement category includes all those areas and locations where asbestos-containing materials are severely damaged and deteriorated and require expeditious abatement actions to protect staff and visitors from exposure. In addition to recommending corrective action at each asbestos location, the survey contractor mentioned above will develop a schedule for removal or containment of the asbestos in this category as well as an estimate of the annual funding requirements. The Smithsonian expects that the survey will identify substantial remaining work in this asbestos abatement category beyond the work currently funded, and it is most likely that this work will take a number of years to complete.

The Opportunities for Abatement category includes those areas or locations where asbestos-containing materials are present in walls, etc., but are not in urgent need of abatement. The asbestos survey will identify those locations where other repair or renovation work is scheduled, and the Institution will plan to complete the removal or encapsulation of the asbestos in conjunction with the other work. The abatement of the asbestos in these areas is often necessary before the actual repair or renovation work can be accomplished. Abatement in this category will generally only be undertaken as part of other projects, unless it becomes deteriorated or damaged.

QUESTIONS SUBMITTED BY SENATOR JAMES A. McCLURE

Infrastructure Needs

Question 127: During last year's House hearing, Mr. Yates requested that you estimate the needs that you consider to be of primary importance to the Smithsonian. The record indicates you provided a very complete list of unfunded priorities from the vantage point of central management. The list totaled \$4.037 million.

How does the list of infrastructure needs included in the FY 1991 budget compare to the list provided to the House during the FY 1990 process?

Answer: The list of infrastructure needs included in the FY 1991 budget justification is much more extensive and comprehensive than the list of unfunded FY 1990 needs submitted at the request of Mr. Yates last year. Of the original list of 33 items provided during the FY 1990 hearing process, Congress approved additional funding during the FY 1990 appropriations process for 11 of these unfunded requirements and one item was covered by base funding. The Institution's FY 1991 budget request seeks funding for two more items on the FY 1990 list. In addition, two other items on the FY 1990 list, which were not funded, are now identified in the Cultural Pluralism category and not included in the infrastructure category. The remaining 17 items from the FY 1990 list are all included in the more comprehensive FY 1991 list of infrastructure needs. The FY 1991 list of infrastructure needs contains approximately 250 other critical items not on the FY 1990 list that had been identified by Smithsonian bureaus during the FY 1991 budget formulation process, as well as some pan-Institutional infrastructure needs identified by the Assistant Secretaries.

Reinstallation of Permanent Exhibit Halls

Question 128: One of the items included in the list of infrastructure needs list is \$5.2 million per year for the Reinstallation of Permanent Exhibit Halls. To begin addressing this need, you have requested an additional \$900,000 in FY 1991 for two museums.

These funds will be used by the National Museum of Natural History and the Freer Gallery of Art, and will allow them to increase their exhibition base funding for an extended program of phased replacement of the oldest exhibit halls.

The budget indicates you need \$5.2 million per year to address this problem.

What is the total estimate for this effort?

Answer: The total estimate for exhibit reinstallation for the Museum of Natural History and the Freer Gallery of Art are presented below. The funding requirements for the other museums represented in the \$5.2 million infrastructure backlog (indicated in the next question) are currently being identified as part of the FY 1992 budget formulation process.

National Museum of Natural History: The total cost of the complete renovation of the National Museum of Natural History's 30 permanent exhibit halls, most of which are decades old and contain outdated subject matter, is currently projected to be \$150 million. The Museum requires a total annual Federal base increase for exhibit renovation of \$2.5 million to speed up the renovation of its seriously outdated exhibit halls to a pace of at least one completed hall per year, each of which costs approximately \$5 million. The Museum intends to raise another \$2.5 million per year from private sources to match the Federal support. This funding level will also enable the Museum to coordinate the exhibit renovation schedule with the Heating, Ventilating, and Air Conditioning (HVAC) renovation and the move of the collections to the Museum Support Center.

Freer Gallery of Art: The total cost of the permanent reinstallation at the Freer Gallery is estimated to be \$3 million, with one-time Federal funding of \$1.5 million to be matched by \$1.5 million in funding raised from other sources.

Question 129: Why did you only request \$900,000 in FY 1991 when you need \$5.2 million?

Answer: The Institution had originally requested an increase of \$1.398 million for exhibit reinstallation in the FY 1991 OMB budget, but as a result of the OMB passback, the Institution had to reduce this request to \$900,000. The FY 1991 request at the \$900,000 level will enable the Institution to begin to address the two most critical of its present exhibit reinstallation needs: reinstallation of the permanent Freer exhibition galleries before its reopening in 1992, and the continued renovation of the Native American Hall at the National Museum of Natural History. Exhibit reinstallation is a continuous, long-term process, with funding required over a number of years for each phase of the work, from conceptual planning and exhibition design to exhibition production and installation. At the same time, the exhibit reinstallation requires a cyclical schedule with the reinstallation of different exhibitions begun in succeeding years according to a staggered timetable. Therefore, the Institution projects that the funding requirements for exhibit reinstallation will increase in the future to the \$5.2 million level to provide funding for the latter phases of production costs for exhibits begun in FY 1991, as well as the initial phases of reinstallation for other exhibitions at the Museum of Natural History. The expanded funding base will also allow enable the Institution to begin to support the costs of major exhibition reinstallation of other museums in the future. The 5.2 million funding estimate would provide an additional \$1.8 million for the Museum of Natural History (over the FY 1991 request level); and an additional 3 workyears and \$1,670,000 for the Freer Gallery (over the FY 1991 request level). In addition, the funding level of \$5.2 million will support exhibition reinstallation at the Museum of American History (7 workyears and \$817,000), the International Gallery (2 workyears and \$437,000), the Anacostia Museum (2 workyears and \$140,000), the Air and Space Museum (1 workyear and \$108,000), the Hirshhorn Museum (\$100,000), the National Zoo (\$100,000), and the establishment of a Washington, D.C. exhibition space for the Cooper-Hewitt Museum (\$75,000).

Human Resources Management

Question 130: The National Academy of Public Administration (NAPA) urged that the Smithsonian shift the emphasis of its Human Resources Department from a "procedures and process" operation to an organization that provides leadership in managing in the Institution's human resources (pg. 3).

In addition, the Academy pointed out that the ratio of employees served to personnel staff was well above the ratio recommended by the President's Council on Management Improvement.

To accomplish many of the recommendations included in the report, the Smithsonian has requested an increase of \$426,000 for FY 1991 and indicates that \$668,000 is necessary annually.

Please identify the costs involved with each recommendation included in the reports, and the costs associated with each recommendation as well as the amount requested for FY 1991 for those recommendations.

Answer: The NAPA report made a number of recommendations which have significant cost implications. Among them are:

1. Branch chiefs should be full-time supervisors. Requires three Personnel Management Specialist positions (\$165,000).
2. Training and experience voids. Current training needs identified at \$21,000 for core professional training. Expected training levels estimated at \$35,000.
3. Increase number of personnel assistants in personnel services branches. Requires three Personnel Assistants (\$78,000).
4. Implement recommendations of earlier studies of OPersA. Two recommendations having significant cost implications are:
 - Inspector General Study. Develop and install personnel action tracking system. Minimum system under development budgeted at \$60,000.
 - Management Analysis Office Study. Expand and improve Bar-Code personnel folder tracking system. Minimum enhancements estimated at \$3,000.
5. Establish a post-audit program to monitor application of regulations and policies. Establish a personnel management evaluation program.
 - Post-audit program estimated to require two Personnel Management Specialist positions (\$92,000).
 - Personnel management evaluation program estimated to require three Personnel Management Specialist positions (\$165,000).

The recommendations listed above represent only a few of the recommendations identified in the National Academy of Public Administration report. After the Institution fills the current vacancy of the Director of Human Resources, the new director will be tasked with assimilating all the NAPA recommendations, determining with senior SI management which recommendations should be implemented and in which order and developing an action plan and budget.

Pending appointment of the new Director, expected by the end of this summer, the Institution is only seeking funding in FY 1991 to address two immediate critical needs: staffing to administer the delegated examining authority granted to the Smithsonian by the Office of Personnel Management in June of 1988 (5 workyears and \$276,000); and additional staff to support the current level and

quality of personnel services in response to the recent growth of total Smithsonian employment (4 workyears and \$150,000).

Question 131: What is the current ratio of employees served to personnel staff at the Smithsonian, the ratio recommended in the NAPA report and some comparisons of other Federal agencies?

Answer: Between FY 1981 and 1989 the Smithsonian's total staffing increased by approximately 25 percent, while staffing for the Institution's Office of Personnel Administration (OPersA) increased by almost 36 percent. This increase improved the personnel-to-employee ratio from a calculated 1:105 to its current 1:92. In a 1987 comparison of 25 selected agencies based on OPM data, the ratios ranged from 1:30 to 1:112, with a median of 1:67. For example, comparable ratios for the Department of the Interior are 1:63, for NASA 1:67 and for Agriculture 1:68. A 1987 report by the President's Council on Management Improvement endorsed 1:72 as a government-wide benchmark. These numerical ratios are not a formula for success -- even the benchmark does not represent an ideal, but is a standard against which to judge the adequacy of OPersA's staffing level when considering a variety of factors. These include the Smithsonian's organizational structure, types and variety of occupations, degree of non-competitive service representation, extent of functions that require hands-on work, level of management advisory services and geographic dispersion. In the NAPA survey questionnaire, 27 percent of the respondents cited inadequate OPersA resources as a cause that contributed to its problems to a great extent. Interviews with Smithsonian managers and OPersA staff repeatedly described the personnel office as overworked and understaffed.

Audit Deficiencies

Question 132: The FY 1991 budget indicates that the Smithsonian maintains a strong program of audit and review of its financial program activity. An outside CPA firm performs an annual financial audit, the Inspector General performs financial and program audits on a regular cycle, and the GAO performs special audits from time to time (pg. 3).

These reviews and audits have identified deficiencies in internal controls, policies, and procedures.

The FY 1991 budget requests an additional \$260,000 to eliminate the most critical audit deficiencies. The justification indicates that an additional \$418,000 is needed to eliminate all known audit deficiencies.

What type of return on investment do you expect from the increase of \$260,000? The \$418,000?

Answer: The funding requested in the FY 1991 budget for audit deficiencies (9 workyears and \$260,000) will enable the Institution to eliminate its most critical audit deficiencies. The majority of the funding will reinforce two specific areas in the Office of

Accounting and Financial Services: reconciliation of accounts (6 workyears and \$159,000), and accounting policy and procedures (2 workyears and \$70,000). The balance of the funding will enable the Institution's Office of the Inspector General to hire an additional auditor (1 workyear and \$31,000).

The reconciliation of accounting records is a critical internal control function, since it exposes unauthorized transactions and transactions omitted either intentionally or unintentionally. Currently, all reconciliations are essentially done by hand. Staff time available to perform reconciliations is approximately the same as ten years ago, while the number of accounts and the volume of transactions have increased eight-fold. As indicated in both past and present audit reports, this situation has led to inaccuracies in accounting postings that could have been avoided if accounts were reconciled in a more timely and complete manner. The requested funding will allow the Office of Accounting and Financial Services to hire three accountants and three accounting technicians to operate an account reconciliation program that meets the requisite standards of timeliness, completeness, and audit worthiness.

Extensive analysis of the Institution's financial environment is required on a continual basis to develop accounting policy and procedures that comply with generally accepted accounting and internal control principles. Even after the decision is made to adopt a revised policy or procedure, work must continue to ensure its successful implementation throughout the Institution, and to test for compliance. With the conversion to the new Financial Accounting System, the Institution will require a substantial revision of existing accounting policies and procedures to reflect the changes instituted in the new system. The requested funding will allow the Office of Accounting and Financial Services to hire two new systems accountants to update present policies and procedures and dedicate more staff time to the implementation and compliance phases.

In April 1989, the Institution established the Office of the Inspector General (OIG) to meet the requirements of the Inspector General Act Amendments of 1988. This Office, formerly the Institution's Office of Audits and Investigations, must now carry out the expanded responsibilities mandated by the Inspector General system. The requested increase will allow the Office of Inspector General to hire an auditor position to support its investigative staff. Presently, auditors supplement the skills of the investigative staff in conducting such investigations when availability permits. With increases in OIG investigative cases, it has become increasingly more difficult to assign audit personnel to the investigative staff and still meet audit obligations. By increasing the expertise of its investigative function, which must address a wide variety of technical Smithsonian activities including procurement, financial management, and collections management, the Office of the Inspector General will help deter criminal activity and other forms of misconduct at the Institution.

The additional 9 workyears and \$418,000 identified as an unfunded infrastructure requirements backlog would allow the Institution to address several less urgent audit deficiencies, including the reconfiguration of permanent and archival collections

files at the National Portrait Gallery (2 workyears and \$162,000), the purchase of additional security equipment for the Office of Protection Services (\$50,000), collections inventory support for the Museum of American History (5 workyears and \$136,000), and the reconciliation of fund balances and the preparation of periodic financial summaries and operations reports by the Smithsonian Astrophysical Observatory for the Smithsonian's Treasurer's Office (2 workyears and \$70,000).

Space Deficiencies

Question 133: The FY 1991 budget indicates that the Institution has a variety of space deficiencies which need to be addressed in the near future. Currently, the Institution leases 99,000 square feet of Space at L'Enfant Plaza for administrative personnel, and owns 165,000 square feet of space on North Capital Street which is used as a service center.

However, the budget indicates a need for a Service Center of approximately 350,000 square feet to house all related activities in one place and to free space on the Mall for public programs. To address anticipated additional leased space in FY 1991, the Institution has requested an additional \$248,000.

Are your total space needs 350,000 square feet or is that what is necessary to accommodate the Service Center? If not, what are your additional requirements?

Answer: The 350,000 square feet relates to the housing of activities now at the leased North Capitol Street facility which is approximately 165,000 square feet. As described in the Program of Requirements, the Service Center would provide for the following special purpose and light industrial functions: warehousing, shipping and receiving; craft and trade workshops; printing and binding workshops; vehicle maintenance; library and archival storage; training and a computer center. The 350,000 sq. ft. of space relates only to these and similar functions including some activities presently housed in Museum buildings (which the Institution needs to relocate in order to free space in those structures for public programs). In addition to service center requirements, the Institution needs space to consolidate administrative functions now housed in leased office space (preferably in a Smithsonian-owned building) and further develop the Institution's museum collection storage facility in Suitland, Maryland (perhaps amounting over the next 20 or more years to 2 million square feet).

Question 134: What proximity to the Mall is necessary?

Answer: Immediate proximity to the Mall is required for administrative functions, such as personnel, accounting and procurement activities. Such functions are now in leased space at L'Enfant Plaza and at Capital Gallery. A consolidation must be no further away than those locations and preferably closer. Special

purpose and light industrial space must be convenient to and have easy access to the Mall. Average driving time during weekday business hours should not exceed 15 minutes. With regard to museum collections storage, we will continue to make use of and further develop our facility in Suitland which has proven to be quite convenient to downtown users.

Question 135: What type of lease/purchase agreement are you examining for the future?

Answer: For the service center, the Institution will entertain offers structuring its interest in a site in any of the following manners: lease with structure to effect a reversion of fee ownership to the Smithsonian at the end of the lease term, sale of site, sale of land and leasing of buildings and other alternatives. For administrative purposes, the preferred acquisition is space in a present Federal building made available to the Institution. For space requirements for collections storage, direct Federal construction on Smithsonian property is preferred although commercial development on a lease/purchase basis on our site will be explored.

Question 136: What size and type of space do you anticipate being necessary with the \$248,000 increase you have requested in FY 1991?

Answer: Since a long-term solution to the consolidation of administrative functions in a Smithsonian owned building will not happen for several years, the FY 1991 budget requests funding to lease and prepare an additional 5,000 square feet of space in a commercial building to augment space now leased at the L'Enfant Plaza location in order to free space in the Arts and Industries Building for public programming. (Based on the Institution's cost-sharing of these space rental costs between Federal and Trust funds, the Federal share of these costs is \$155,000 for space rental and \$46,000 for space preparation.) The requested increase also included funding to hire a rent administrator (1 workyear and \$47,000) to consolidate the administration of associated rent accounts within the Office of Facilities Services.

Conservation of Library and Archival Collections

Question 137: While the FY 1991 budget does not request additional funds for Conservation of Library and Archival Collections, it does identify an annual need of \$6.2 million. It is my understanding that some discretionary fund monies are available to all the Smithsonian Directors for this purpose (pg. 5).

During last year's House hearing, the Smithsonian was asked to submit a Preservation and Conservation plan to the Committee. Unless I am mixing apples and oranges, the plan called for \$713,000 for a brittle books program and a documentary research resources program.

How much have the Directors requested in the past for this purpose and how much has been provided?

Answer: Prior to the FY 1991 budget request, funds for preservation and conservation were subsumed under more general S&E requests, and it is not possible to identify or quantify them.

As a result of the House Subcommittee's request last year, the Institution identified an additional funding requirement of \$713,000 for the first phase of a gradual approach to coping with growing documentary research resource deterioration problems: \$162,000 for brittle books; \$151,000 for a planning administrator and three technicians to assess the conservation needs of more than a dozen archives and documentation centers within the Smithsonian; and \$400,000 for a series of "triage" conservation projects to clean, deacidify, repair, encapsulate, or otherwise treat some of the worst-case and more valuable items.

During Congressional action, a total of \$113,000 was provided in FY 1990 for the conservation and preservation of brittle books, including the partial-year funding of the 4 positions required for the program. (The additional funding to annualize these part-year personnel costs (\$21,000) is included in the FY 1991 budget request.) No funds were provided for the planning administrator and technician, or for the documentary research resource program.

Question 138: How does the plan you discussed with the House last year compare to the proposed \$6.2 million plan?

Answer: The plan discussed with the House last year was for a phased program for the preservation of brittle books and documentary research resources. The plan represents the first phase of a moderate growth program that would allow the Smithsonian to analyze our needs thoroughly.

In FY 1988, the Smithsonian Institution Libraries (SIL) redirected a position to hire a preservation administrator who established policies and procedures for a preservation microfilming program. SIL also contracted with a commercial micropublisher to microfilm a small collection of publications. This project is serving as a pilot to test procedures for handling brittle material. With funding provided in FY 1990 (\$113,000), the Smithsonian Institution Libraries has launched a modest brittle book preservation program. The SIL has one specific collection alone (200,000 trade catalogs) which alone could cost upwards of \$8,000,000 to preserve.

The FY 1990 plan also requested support to hire a preservation planning administrator and three technicians to assess the needs, in non-book research resources, of more than a dozen archives and document collecting centers within the Smithsonian, and to prepare specific long-range preservation plans for each. To address critical needs in this area, the plan requested support to establish a competitive Research Resources Program, whereby proposals would undergo a peer review process linked to national professional expertise and concerns outside the Smithsonian. This plan would have allowed the Institution to present comprehensive plans of needs

in future years and, at the same time, would have permitted the Institution to make a modest start in preserving non-book research resources.

The \$6.2 million figure, identified as the estimated unfunded requirements backlog in the FY 1991 budget request, is not, properly speaking, a plan. It is an approximate accumulated aggregate of deficiencies in the central Smithsonian Libraries and the library at the Smithsonian Astrophysical Observatory and in preservation of documentary research resources in more than a dozen archives and bureau-based documentation centers. For example, among the components is an estimate provided by the central Smithsonian Archives that a backlog exists of some 8,000 cubic feet of records. This backlog requires rehousing, arrangement, and description to provide minimal basic archival holdings maintenance and intellectual control for research use at a cost of \$4,560,000 (based on estimate of processing at \$570 per cubic foot).

A second major component of the \$6.2 million backlog is \$625,000 for preservation of library and archival collections at the Museum of American History. Among the needs that this funding would address are: additional staff for archives conservation work, conservation supplies, compact shelving for the archives vault, and microfilm services. Also included in the backlog is \$400,000 to fund the Research Resources Program (originally identified in last year's plan).

It is equally important to note that the \$6.2 million figure does not include:

(1) an annual accumulation to the backlog of processing, from normal Institutional growth and diversity, which for the central Smithsonian Archives grows at the rate of 1,000 cubic feet of new accessions per year, and which would require \$570,000 to process to a minimal level of acceptable archival control;

(2) the costs of specialized conservation work which includes cleaning, repair, deacidification, etc., which must proceed page-by-page at a cost of about \$60 - \$80 per hour and requires between 8-24 work-hours per page. These needs cannot be discovered and identified except through the aforementioned process of rehousing, arranging, and describing materials. The Institution cannot know the full scope of the need until the processing work is done. The National Archives estimates that perhaps one percent of its holdings requires this sort of work. If that estimate were applied to the central Smithsonian Institution Archives, it would translate into about 150 cubic feet or about 300,000 pages. At 10 hours per page and \$80 per hour the cost would be \$240 million. (The \$400,000 request in FY 1990 for a Research Resources Program was intended to make a start on this); and

(3) longer-range intentions to plan and establish archival service facilities such as paper conservation, microfilming, photo conservation, and magnetic tape conservation laboratories for the high-volume, quick-turn-around work necessary to maintaining the momentum of a conservation program. Construction and furnishing of such a facility probably should be measured in the tens of millions of dollars, and S&E operation at about \$5-7 million per year.

Question 139: What is the additional cost to defer this effort into the future?

Answer: The Smithsonian does not have an Institution-wide estimate, but the central Smithsonian Archives and the central Smithsonian Libraries can again serve as examples to indicate the probable dimensions of the problem.

Each year that the problem in the central Archives is not addressed adds another 1,000 cubic feet which would cost \$570,000 to process to a base level of archival control. This figure must be compounded by somewhat similar figures for the Archives of American Art and the National Air and Space Archives, somewhat lesser figures for the National Anthropological Archives and the Archives Center of the National Museum of American History, and still lesser figures for some of the other bureau-based archives centers such as the Freer/Sackler Galleries Archives and the Eliot Elisofen Photographic Archives of the National Museum of African Art. There is at present no detailed, archives-by-archives calculation.

The National Commission on Preservation and Access now estimates that the cost of preserving one brittle book is \$95.68. The average cost/volume for replacement of volumes with preservation microfilm or photocopy has increased over the last five years, and experts think this cost is likely to continue to rise. To defer this effort not only increases the cost, but also increases the risk of losing collections if they are not preserved. Failure to save collections would result in an eventual loss of \$10,000,000, assuming a cost of only \$100 per unreplaceable volume.

To defer conservation and preservation only hastens deterioration, destruction, and depletion of research resources. Deferred investment simply intensifies a growing "national debt" of future replacement and renewal costs. Conservation is not a one-time need; it represents an essential sustained capital investment. Each year that the investment is not up to optimum levels accelerates cumulative deterioration, increases total cost and total loss, and makes it ever more difficult to recover these collections.

The non-monetary cost of deferring this preservation is a loss of the Institution's research resources for future generations. No research institution can eliminate the problem of deteriorating material, but by addressing these unfunded requirements, the Smithsonian can minimize it and better assure that its research resources endure for future generations.

Cultural Pluralism

Question 140: You have requested an additional \$7.3 million in FY 1991 to undertake various initiatives that will broaden the cultural diversity of your public programs.

Could you provide for the Committee and for the record a breakdown of these funds by bureau and program?

Answer: The following table provides the breakdown of the \$7.3 million by bureau and program:

BUREAU	INCREASE	FTE	\$000s
A/S Museums, Immediate Office	African-American Programming	0	100
Nat. Museum of Natural History	Associate Director for Public Programs	2	100
Nat. Museum of American History	Columbus Quincentenary Program	1	95
Nat. Museum of the Amer. Indian	FY 1991 Program Growth	93	6,536
Nat. Museum of American Art	Columbus Quincentenary Exhibition	1	15
National Portrait Gallery	Columbus Quincentenary Exhibition	0	25
Hirshhorn Museum	Columbus Quincentenary Exhibition	0	30
Office of Public Affairs	Columbus Quincentenary Program	0	15
Smithsonian Institution Press	Columbus Quincentenary Program	0	15
Office of Folklife Program	Columbus Quincentenary Program	1	50
Off. of Elem. & Sec. Educ.	Quincentenary Symposium for Teachers	0	15
Off. of Quincentenary Programs	Quincentenary Planning	1	40
Affirmative Action Program	Special Employment Initiative (Phase III)	4	248
TOTAL, SMITHSONIAN		103	7,284

Nonappropriated Sources of Funding

Question 141: In the FY 1990 justification you anticipated that revenues from government grants and contracts would total nearly \$24 million in FY 1989 (page 15). The FY 1991 justification indicates that you anticipate this will increase to \$30 million in FY 1990 (page 14) and nearly \$32 million in FY 1991 (page 307).

In addition, gross Trust fund revenues are anticipated to increase from a projected \$225 million (page 15 states merely "exceeds \$200 million") and an actual \$240 million in FY 1989 to \$248 million in FY 1990 and \$253 million in FY 1991.

To what do you attribute these increases?

Answer: Actual government grant and contract revenue was \$21 million in FY 1989, \$3 million less than our original projections. This reduction in the level of anticipated awards resulted from delays and cutbacks in Federal funding for those government agencies and departments which traditionally have provided grants and contracts funding to the Smithsonian. The primary component of the increase from FY 1989 to FY 1990 is the funding of new programs in submillimeter astronomy and solar investigations at the Smithsonian Astrophysical Observatory.

Actual FY 1989 gross Trust fund revenues were up approximately \$15 million over projected amounts. Unanticipated gifts and bequests were the largest component of the increase; most were transferred to endowment as per the donors' or Regents' instructions. In addition, interest and miscellaneous income were up although Institutional self-generated revenues were down.

Projected increases in gross Trust fund revenues in FY 1990 and FY 1991 are relatively modest, providing little more than the anticipated increases in inflation and uncontrollables. Further, our most recent projections with respect to self-generated revenues show significant decreases based upon FY 1989 experience and a general tightening of discretionary spending among our audiences.

Serious efforts are in fact underway to identify Trust fund budget cuts in the \$2-3 million dollar range to insure our FY 1990 budget remains balanced. Similar cuts appear to be necessary for FY 1991 as well.

Climate Change

Question 142: In May of last year, several stratospheric molecules were obtained by a balloon-borne infrared spectrometer flown from Palestine, Texas (pg. 40).

Have Smithsonian scientists analyzed these molecules? If so, what have you learned?

Answer: Scientists from the Smithsonian Astrophysical Observatory have analyzed the stratospheric observations obtained with this balloon-borne infrared spectrometer. These were the first stratospheric observations of several of these atmospheric constituents, including the chlorine-containing reservoir species HOCl (hypochlorous acid). These measurements made by SAO scientists are more accurate than current theoretical predictions: From analyzing their measurements, SAO scientists found that the concentration of HOCl was about 40% lower than had been predicted. The chemistry involved is, however, so complicated that we can not yet conclude whether this result implies a greater or lesser threat to the ozone layer than had previously been thought. SAO also made the first day/night measurements of stratospheric HO₂ (hydroperoxyl radical). This species is highly reactive and plays a key role in the HO_x catalytic cycle of ozone destruction. SAO's results suggest a possible need for a revision of chemical theory in the 40 and 50 km altitude region, where it is already well known that the theoretically calculated amount of ozone falls short of the measured amount.

Environmental Studies Program

Question 143: The Smithsonian Institution and the Minerals Management Service are in the fourth of a five year study of an oil spill from a refinery in Panama which affected a Smithsonian coastal research facility (pg. 53). The spill is unique in that it affected an area of coral reefs, mangroves, and seagrass beds for which the Smithsonian had a significant amount of pre-spill data (pg. 35).

Can you briefly tell us what we have learned from the study so far?

Answer: In April 1986, at least 50,000 barrels of crude oil spilled from a ruptured storage tank into Bahia Las Minas on the Caribbean coast of Panama. The oil could not be contained and spread along about 50 miles of labyrinthine shoreline. A small amount of dispersant was applied to slicks about a week after the spill; clean-up efforts were very limited because mangrove swamps

occur along most of the oiled shoreline. At about one-fifth the volume of the "Exxon Valdez" spill, it was the largest nearshore oil spill in the tropical Americas.

The Galeta Marine Laboratory of the Smithsonian Tropical Research Institute (STRI) is located about three miles west of the site of the spill. The coral reef at Galeta, where there have been over 20 years of biological studies, suffered extensive damage from the spill. Oil contaminated extensive areas of the reef and intertidal reef flat, causing massive die-offs of marine organisms. Other habitats damaged by the spill included seagrass beds and mangroves.

The reef at Galeta comprises about 50 acres of a 250-acre marine biological preserve studied by Smithsonian scientists since 1969. Support for these investigations, which have included the distribution, abundance, growth, reproduction, and behavior of marine plants and animals, has come mainly from the institution's Environmental Sciences Program. Collectively, this work provided a particularly extensive amount of baseline biological data for assessing effects of the spill.

This was the first major oil spill in such a well-studied tropical area. Furthermore, investigations began as oil was washing ashore. A short-term study of ecological effects of the spill, supported by the Minerals Management Service (MMS), was completed in March 1987. Assessments were made of effects of oiling on reef flat communities, reef-building corals, mangrove forests, communities attached to mangrove roots, and seagrass communities. Also, chemical analyses of oil in environmental and biological samples were conducted. STRI found that the spill had widespread lethal and sublethal effects on prominent organisms in all these environments, both intertidal and subtidal. The types of organisms affected covered the full spectrum of ecological categories: plants/animals, mobile/attached, predator/prey, etc. There were surprisingly extensive die-offs of submerged corals and of some types of animals in seagrass beds. Although the death of mangrove trees from oiling was not surprising, the extent of deforestation was unprecedented (about 185 acres along 17 miles of shore). The rich assemblages of organisms attached to mangrove roots were also devastated.

Chemical analyses confirmed visual rankings of the severity of oiling made during and soon after the spill (heavy, moderate, none), and documented massive concentrations of spilled oil in intertidal mangrove sediments at heavily oiled sites. They also demonstrated for the first time in natural populations a close association between concentrations of oil in the environment and in coral tissues. Such exposure to oil underwater appears to explain the observed die-off of corals.

The results of the short-term project demonstrated the need for longer-term investigations within and outside the oiled area. With further funding from MMS, STRI began a five-year study in March 1987. So far, STRI researchers have found that certain species of algae and invertebrates in environments exposed to the open sea regained pre-spill abundance and/or an abundance similar to unoiled controls less than two years after the spill. This recovery seems to result from a combination of short life-cycles and considerable

reproduction of the organisms, and little chronic re-oiling along open coasts. Similar recovery has generally not occurred for organisms in more sheltered environments of Bahia Las Minas after nearly four years. In these areas there has been chronic re-oiling as the spilled oil emanates from mangrove sediments. As a result, oil slicks have been persistent for nearly four years at mangrove, seagrass, and coral reef sites.

There were instances of unexplainable declines in populations at control sites and resulting similarities with oiled sites a few years after the spill. One example of this occurred for reef-building corals. Such changes in controls complicate or preclude assessments of recovery from the spill. In this case, there is so little live coral both at oiled and control sites that prospects for recovery of coral reefs in the near future are not good.

Ecological data from all the studies are extremely variable among replicate samples from a particular site, among replicate sites, and through time. This is not unusual. However, such variability makes extensive replication necessary to detect differences related to oiling among sites and through time. Otherwise, statistical analyses may be uninterpretable and/or misleading.

Another approach to the problem of evaluating effects of pollution involves examining coral skeletons, which contain annual growth bands analogous to those in trees. Since corals may survive for many decades, they provide a long-term record of changing conditions for growth, associated in our study area with such factors as the 1986 spill, increasing sedimentation from deforestation and erosion, industrialization, and construction of the Panama Canal and the city of Colon. Our preliminary findings for the past decade show significantly reduced coral growth during 1986, the year of the spill, for three of four species. We plan to extend the scope of this type of analysis by drilling long cores of skeleton from large corals and thus obtaining 50-100 years of information on growth.

Large numbers of mangrove seedlings are growing in areas deforested by the spill. Some seedlings survived the spill, despite the die-off of surrounding adult trees. Others have dispersed into dead areas or were planted as part of a reforestation project sponsored by the oil company which caused the spill. Studies elsewhere suggest it may take at least 30 years for mature mangrove forests to repopulate the deforested acreage. Despite prompt recolonization, these mangroves grow slowly.

Large quantities of the spilled oil still occur in mangrove sediments; oil oozed from core samples collected about three years after the spill. This reservoir undoubtedly contributes substantially to the four years of chronic oil slicks that STRI scientists have observed since the spill. In protected inner reaches of embayments, continued oiling prevents the re-establishment of biological communities, for example, plants and animals attached to mangrove roots. At more open coastal areas where waves and currents flush coastal habitats, researchers observed at least partial ecological recovery on reef flats and mangrove roots within a few years of the spill. An important

exception to this are reef-building corals, which have declined for reasons in addition to the oil spill. An important difference between northern and tropical coastal ecology is the vast extent of biologically generated physical structure in the tropics. These include coral reefs, mangroves, and seagrass beds, all of which provide myriad shelters, substrata for attached animals and plants, and food. Damage to or loss of any of these habitats has broad ecological ramifications as well as effects on physical processes, such as coastal erosion.

Question 144: How do you plan on using the information gathered in the study?

Answer: Information gathered from this study will be widely disseminated in manners common to scientific research conducted at the Smithsonian. The primary means of reporting technical findings is through peer-reviewed scientific journals. Some papers have been published; others have been submitted or are in preparation. A major article appeared in an issue of the journal *Science* in January 1989.

STRI expects the study to produce about 20 such technical articles. In addition, STRI will prepare three technical reports for the Minerals Management Service (MMS). The first of these has been submitted and is in review at MMS; it is nearly 500 pages long and covers findings through the first half of the study.

STRI also receives requests for information from various media. For example, reporting on the study has appeared in such newspapers as the *New York Times* and *The Washington Post*, and the magazine *New Scientist*.

As part of the study, data management staff organize and archive computer files for all data collected. The data are available both through the Smithsonian and MMS. Biological specimens will be stored at the National Museum of Natural History, where they will be available for future scientific study.

Question 145: Is this area similar to Federal waters off the coast of Florida?

Answer: Southern Florida and Panama share many species in common, including such important species as red mangrove, turtlegrass, and various reef-building corals. Since Florida is subtropical, water temperature there vary much more seasonally than in Panama. Many of the shared species are at or near their northern boundaries in Florida. Die-backs of tropical marine species during extremely cold winters are not uncommon in Florida.

The geologies of Panama and Florida are strikingly different. Whereas Panama is volcanic and tectonically complicated, Florida is part of an extensive carbonate-bank system. Coastal morphologies in the two areas tend to be rather different. For example, the massive turtlegrass beds off the western coast of Florida have no analog in STRI's study area, although the same species is abundant in both regions. Although reef-building coral species are shared between

Florida and Panama, the main framework species often differ between the two regions.

Since there exist a mix of biological and physical similarities and differences between the two regions, blanket generalities about ecological effects of a major oil spill could be misleading, at best. It is only safe to predict that a major spill on the coast of Florida would cause extensive die-offs of marine life. This has been seen repeatedly after major coastal oil spills in all regions of the world. Particulars on the distribution and extent of death would depend on environmental circumstances during the spill, and thus are more difficult to predict. Such particulars would also effect possible "trajectories" of ecological recovery.

There also exist other kinds of differences between Panama and Florida. For example, recreational uses of Florida coastal waters and beaches are far more extensive than in Panama. Differences in commercial and recreational fisheries also exist. As a result, socioeconomic consequences of a major oil spill on the coast of Florida could be much more serious than in Panama.

National Museum of the American Indian

Question 146: Public Law 101-185 established the National Museum of the American Indian. One provision in the Act requires that no funds can be obligated for actual construction of any facility until 60 days after the Board of Regents transmits to Congress a written analysis of the total estimated cost of the construction and a cost-sharing plan.

During the Board of Regents meeting in May of 1989, construction estimates proposed an \$85 million museum on the Mall -- \$24 million to renovate the Custom House in New York and \$63 million for a museum support facility in Suitland, Maryland.

The FY 1991 budget indicates the estimate for the museum on the Mall has risen from \$85 million to \$106 million and the Suitland facility has decreased from \$63 million to \$44 million.

Why has there been a change in the estimates?

Answer: The May 1989 cost projections were very early "order of magnitude" estimates that were developed in the initial discussion stage of planning for the new facilities. The change in the estimates for the Suitland facility reflects later decisions regarding the aggregation of program elements to be located at that location. The total square footage estimate was therefore reduced from 350,000 square feet, which would have accommodated contiguous storage of existing anthropological collections of the National Museum of Natural History, to 200,000 square feet. This estimate of square footage will provide adequate storage, research, laboratory, and other support space for the Heye collection. The Suitland cost was also adjusted to include \$12 million for equipping and furnishing the facility.

The May 1989 estimate for the Mall facility was increased to include the cost of equipping and furnishing the building (\$10 million), and to include sufficient allowance for additional depth of excavation that may be required to ensure the required square footage if the building design has a roof elevation closer to that of Air and Space Museum rather than that of the East Building of the National Gallery of Art.

It should be noted, however, that the current cost estimates are still highly preliminary. The Institution will begin development of specific program requirements and relationships and conceptual planning of the two buildings in FY 1990. Only once this more precise information on planned space uses and possible configurations is available can there be reasonably accurate estimates of construction costs.

Question 147: The FY 1991 budget requests \$6.7 million for construction of the Custom House. Funding for construction of the Mall site and the Suitland facility is not anticipated until FY 1992 and beyond.

What is the status of the construction plan and cost sharing plan required in the Act?

Answer: The Institution will use funding received in FY 1990 to begin detailed planning of the Custom House renovation and preliminary program planning for the two Washington facilities of the National Museum of the American Indian.

The Institution expects to complete planning of the Custom House space, including construction cost estimates, by early July 1990. The City and State of New York have both pledged \$8 million toward construction of the Custom House space.

The Smithsonian will complete the detailed planning for the construction of the Suitland facility in FY 1991 and the Mall building in FY 1992. The authorizing legislation requires that one-third, or approximately \$35.3 million, of the \$106 million estimate for design, construction and equipping of the Mall museum be raised from private sources. The Institution is assembling a fund raising campaign in order to acquire these outside funds by FY 1994 when construction of the Mall museum is currently scheduled to begin.

Question 148: The May 1989 estimate included an estimate of \$16 million for "one time costs" for the Mall and Suitland facilities. These costs include storage equipment, opening exhibits, conservation, research and library equipment, etc.

Is this cost still separate from the construction costs?

Answer: The costs for storage equipment, security installations, conservation, research and library equipment, and other furnishing and equipment are now included in the construction costs of the three facilities. Opening exhibition costs will be included in the National Museum of the American Indian's Salaries and Expenses request in the appropriate fiscal years.

Question 149: Has the estimate changed since May of 1989?

Answer: Yes, the current furnishing and equipping estimates for the Mall museum and the Suitland Collection Study and Research Center are \$10 million and \$12 million respectively. These estimates may be refined further as the Institution completes more detailed planning for these facilities.

Question 150: To meet the cost share requirements, the Smithsonian has requested an additional \$670,000 to administer a fund-raising effort (pg. 130). The Smithsonian anticipates four major sources of funding for construction of these facilities: New York City; the State of New York; Federal appropriations; and private donations.

What do you anticipate your funding to be by source, and by year?

Answer: The Smithsonian anticipates funding for construction of facilities from the following sources, in the amounts indicated and in the fiscal years specified:

City of New York - \$8 million for renovation of the Old United States Custom House; FY 1990-1991

State of New York - \$8 million for renovation of the Old United States Custom House; FY 1990-1991

Private donations - \$35.3 million no later than construction initiation in FY 1994.

Federal appropriations - As reflected in the following table:

	FY 1990	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995
Custom House						
Renovation ¹	\$0.6	\$6.7	\$1.7			
Suitland Collection						
Storage	\$0.3	\$1.0	\$30.7	\$12.0		
Mall Museum						
Building ²	\$0.7	\$0.4	\$7.4	_____	\$52.2	\$10.0
Total	\$1.6	\$8.1	\$39.8	\$12.0	\$52.2	\$10.0

*Estimates are subject to revision as a result of timing associated with Smithsonian and Office of Management and Budget planning/budget cycles, and incorporation of information affecting projections.

¹ The Institution will receive aforementioned funding of approximately \$16 million from the City and State of New York.

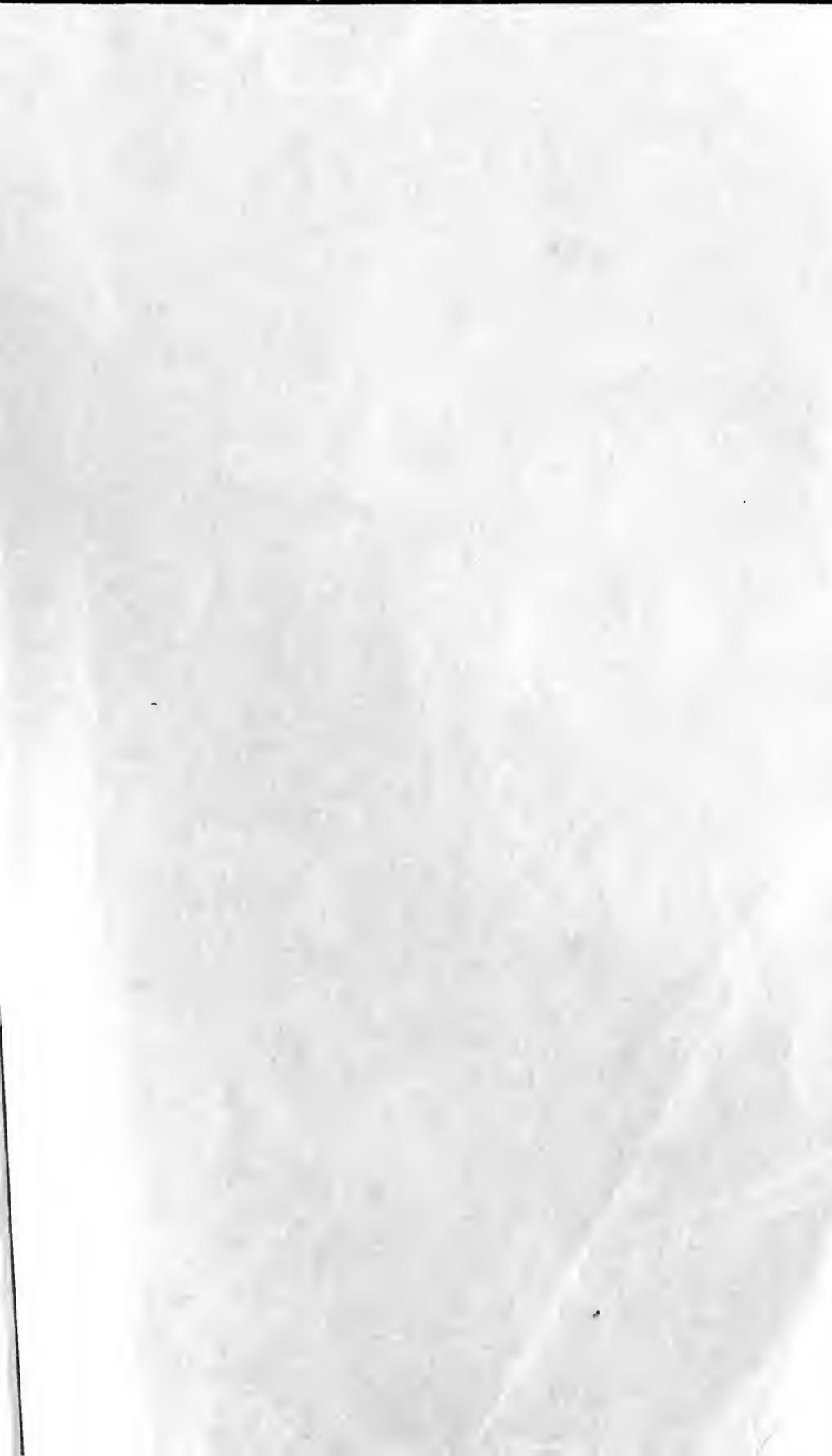
² FY 1990 & FY 1991 include funds for general planning of all facilities. As noted above, fund raising will provide \$35.3 million for construction.

SUBCOMMITTEE RECESS

Senator REID. I thank you very much. The subcommittee will stand in recess until 10 a.m., Tuesday, March 27, when we will hear testimony on fiscal year 1991 budget for Indian Health Service and Fish and Wildlife Service.

[Whereupon, at 11:46 a.m., Tuesday, March 20, the subcommittee was recessed, to reconvene at 10 a.m., Tuesday, March 27.]





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